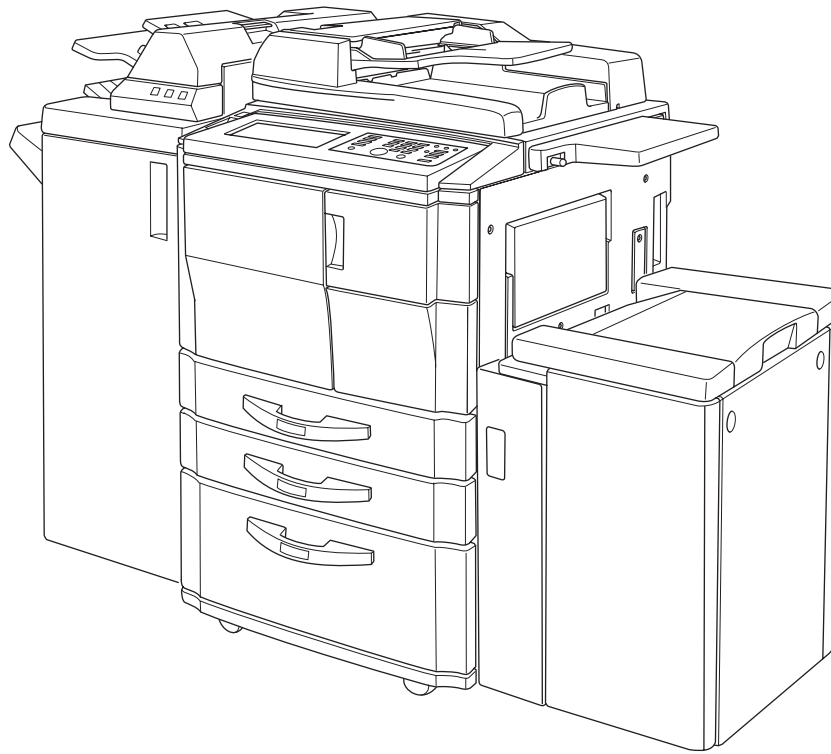
MINOLTA

Service Manual

Field Service

The essentials of imaging

Di650



Dual references may be used on the following:

EDH	**:**	**RADF**
FN-6, FN-112	**:**	**FNS**
C-403, C-404	**:**	**LT & LCT**
Cover Inserter B	**:**	**PI**
PK-2	**:**	**PK**
In-System Writer	**:**	**ISW**

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SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this copier as well as the risk of damage to the copier, Minolta Corporation strongly recommends that all servicing be performed only by Minolta-trained service technicians.
Changes may have been made to this copier to improve its performance after this Service Manual was printed. Accordingly, Minolta Corporation does not warrant, either explicitly or implicitly, that the information contained in this Service Manual is complete and accurate.
The user of this Service Manual must assume all risks of personal injury and/or damage to the copier while servicing the copier for which this Service Manual is intended.
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the copier properly.
Keep this Service Manual also for future service.

DANGER, WARNING, AND CAUTION SYMBOLS AND EXPRESSIONS

In this Service Manual, each of three expressions "⚠DANGER," "⚠WARNING," and "⚠CAUTION" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the copier, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠DANGER :Action having a high possibility of suffering death or serious injury
⚠WARNING :Action having a possibility of suffering death or serious injury
⚠CAUTION :Action having a possibility of suffering a slight wound, medium trouble, and property damage

Symbols used for important warning items are defined as follows:

△:Precaution
⃠:Prohibition
●:Direction

SAFETY WARNINGS

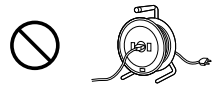
[1] MODIFICATIONS NOT AUTHORIZED BY Minolta

Minolta copiers are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.

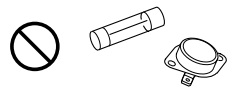
Copier design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

⚠ PROHIBITED ACTIONS:

- Using any cables or power cord not specified by Minolta.

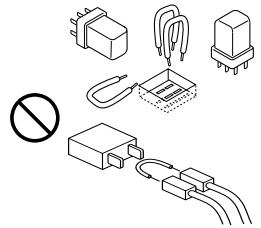


- Using any fuse or thermostat not specified by Minolta. Safety will not be assured, leading to a risk of fire and injury.

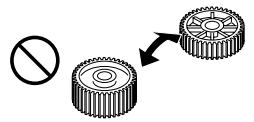


- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.

- Disabling relay functions (such as wedging paper between relay contacts)



- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.
- Making any modification to the copier unless instructed by Minolta
- Using parts not specified by Minolta



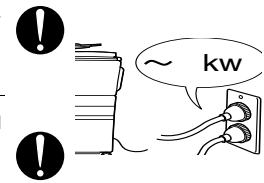
[2] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

Minolta copiers are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

1.Power Supply

⚠WARNING: Wall Outlet

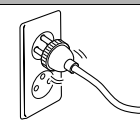
- Check that mains voltage is as specified. Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.
  If excessive current flows in the wall outlet, fire may result.



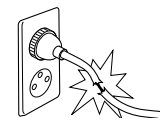
- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.
  If excessive current flows in the wall outlet, fire may result.

⚠WARNING: Power Plug and Cord

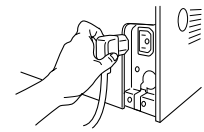
- Make sure the power cord is plugged in the wall outlet securely.
  Contact problems may lead to increased resistance, overheating, and the risk of fire.

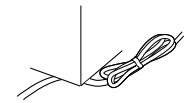


- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plugs on both ends) specified by Minolta. Using the damaged power cord may result in fire or electric shock.

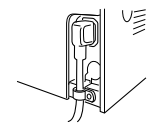


- When using the power cord (inlet type) that came with this copier, be sure to observe the following precautions:
  a. Make sure the copier-side power plug is securely inserted in the socket on the rear panel of the copier.
     Secure the cord with a fixture properly.
  b. If the power cord or sheath is damaged, replace with a new power cord (with plugs on both ends) specified by Minolta.
     If the power cord (inlet type) is not connected to the copier securely, a contact problem may lead to increased resistance, overheating, and risk of fire.



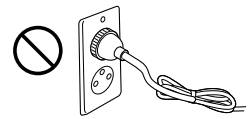


- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.

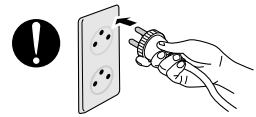


⚠WARNING: Power Plug and Cord

- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.

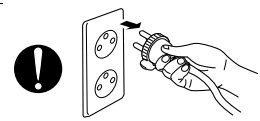


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



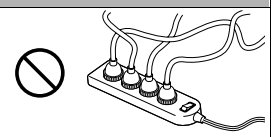
- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.

- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.

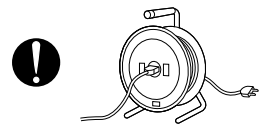


⚠WARNING: Wiring

- Never use multi-plug adapters to plug multiple power cords in the same outlet.
  If used, the risk of fire exists.

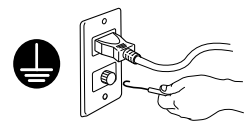


- When an extension cord is required, use a specified one.
  Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.
  Do not use an extension cable reel with the cable taken up. Fire may result.



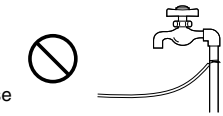
⚠WARNING: Ground Lead

- Check whether the copier is grounded properly.
  If current leakage occurs in an ungrounded copier, you may suffer electric shock while operating the copier. Connect the ground lead to one of the following points:
  a. Ground terminal of wall outlet
  b. Ground terminal for which Class D work has been done



⚠WARNING: Ground Lead

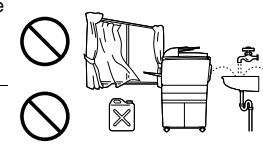
- Pay attention to the point to which the ground lead is connected.
  Connecting the ground lead to an improper point such as the points listed below results in a risk of explosion and electric shock:
  a. Gas pipe (A risk of explosion or fire exists.)
  b. Lightning rod (A risk of electric shock or fire exists.)
  c. Telephone line ground (A risk of electric shock or fire exists in the case of lightning.)
  d. Water pipe or faucet (It may include a plastic portion.)



2.Installation Requirements

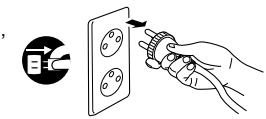
⚠WARNING: Prohibited Installation Place

- Do not place the copier near flammable materials such as curtains or volatile materials that may catch fire.
  A risk of fire exists.
- Do not place the copier in a place exposed to water such as rain water.
  A risk of fire and electric shock exists.



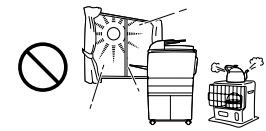
⚠WARNING: Nonoperational Handling

- When the copier is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.
  Dust collected around the power plug and outlet may cause fire.



⚠CAUTION: Temperature and Humidity

- Do not place the copier in a place exposed to direct sunlight or near a heat source such as a heater.
  A risk of degradation in copier performance or deformation exists.
  Do not place the copier in a place exposed to cool wind.
  Recommended temperature and humidity are as follows:
  Temperature: 10°C to 30°C
  Humidity: 10% to 80% (no dew condensation)
  Avoid other environments as much as possible.

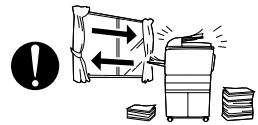


⚠CAUTION: Ventilation

- Do not place the copier in a place where there is much dust, cigarette smoke, or ammonia gas.
  Place the copier in a well ventilated place to prevent machine problems and image faults.

⚠CAUTION: Ventilation

- The copier generates ozone gas during operation, but it is not sufficient to be harmful to the human body.
  If a bad smell of ozone is present in the following cases, ventilate the room.
  a. When the copier is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple copiers at the same time



⚠CAUTION: Vibration

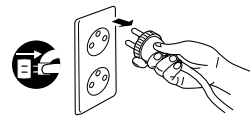
- When installing the copier, read the Installation Guide thoroughly. Be sure to install the copier in a level and sturdy place.
  Constant vibration will cause problems.

- Be sure to lock the caster stoppers.
  In the case of an earthquake and so on, the copier may slide, leading to a injury.

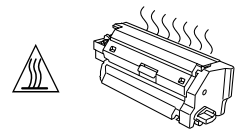
⚠CAUTION: Inspection before Servicing

- Before conducting an inspection, read all relevant documentation (Service Manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure, using only the prescribed tools. Do not make any adjustment not described in the documentation.
  If the prescribed procedure or tool is not used, the copier may break and a risk of injury or fire exists.

- Before conducting an inspection, be sure to disconnect the power plugs from the copier and options.
  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.

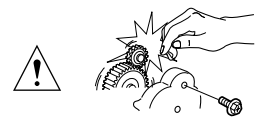


- The area around the fixing unit is hot.
  You may get burnt.



⚠DANGER: Work Performed with the Copier Powered

- Take every care when making adjustments or performing an operation check with the copier powered.
  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.

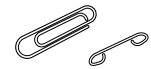


⚠DANGER: Work Performed with the Copier Powered

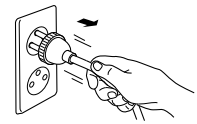
- Take every care when servicing with the external cover detached.
  High-voltage exists around the drum unit. A risk of electric shock exists.

⚠WARNING: Safety Checkpoints

- Check the exterior and frame for edges, burrs, and other damages.
  The user or CE may be injured.
- Do not allow any metal parts such as clips, staples, and screws to fall into the copier.
  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.
  Current can leak, leading to a risk of electric shock or fire.
- When disconnecting connectors, grasp the connector, not the cable.
  (Specifically, connectors of the AC line and high-voltage parts)
  Current can leak, leading to a risk of electric shock or fire.



- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.
  Current can leak, leading to a risk of copier trouble or fire.
- Check high-voltage cables and sheaths for any damage.
  Current can leak, leading to a risk of electric shock or fire.

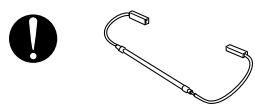
⚠WARNING: Safety Checkpoints

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.
  Current can leak, leading to a risk of trouble or fire.
- Before disassembling or adjusting the write unit incorporating a laser, make sure that the power cord has been disconnected.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

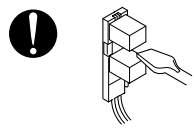
- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.
  The laser light can enter your eye, leading to a risk of loss of eyesight.
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.
  Improper replacement can cause explosion.

⚠WARNING: Safety Checkpoints

- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.
  A risk of fire exists.



- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.
  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the copier (e.g., for clearing paper jam).

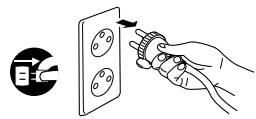


- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.
  Current can leak, leading to a risk of electric shock or fire.

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)
  A risk of copier trouble, electric shock, and fire exists.

⚠HANDLING OF MATERIALS FOR SERVICING

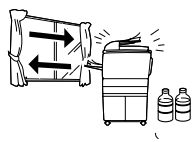
- Unplug the power cord from the wall outlet.
  Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the copier ON before any solvent remnants on the cleaned parts have fully evaporated.
  A risk of fire exists.

- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
  A risk of fire exists.

- When using any solvent, ventilate the room well.
  Breathing large quantities of organic solvents can lead to discomfort.



⚠ DANGER: HANDLING OF MATERIALS FOR SERVICING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.
  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.

- Never throw the used cartridge and toner into fire.
  You may be burned due to dust explosion.

[3] CONCLUSION

1. Safety of users and customer engineers depends highly on accurate maintenance and administration. Therefore, safety can be maintained by the appropriate daily service work conducted by the customer engineer.
2. When performing service, each copier on the site must be tested for safety. The customer engineer must verify the safety of parts and ensure appropriate management of the equipment.

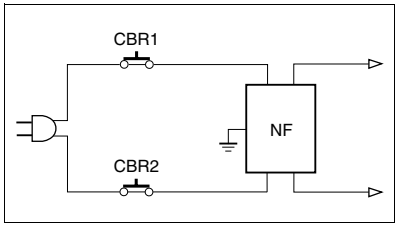
SAFETY CIRCUITS

This machine is provided with the following safety circuits to prevent machine faults from resulting in serious accidents.

[1] Overall protection circuit
[2] L2 and L3 (fixing heater lamps) overheating prevention circuit

These safety circuits are described below to provide the service engineer with a renewed awareness of them in order to prevent servicing errors that may impair their functions.

[1] Overall Protection Circuit



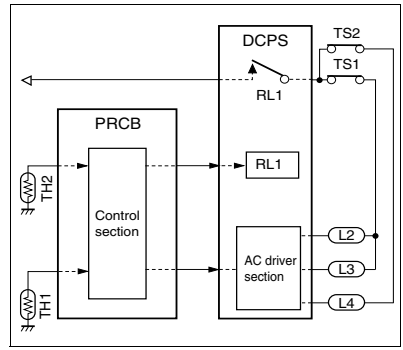
1. Protection by CBR1 and CBR2 (circuit breakers)

CBR1 and CBR2 interrupt the AC line instantaneously when an excessive current flows due to a short in the AC line.

⚠CAUTION:

The CBR1 and CBR2 functions must not be deactivated under any circumstances.

[2] Protection by L2 and L3 (fixing heater lamps) overheating prevention circuit



1. Protection by software

The output voltage from TH1 (fixing temperature sensor 1) is read by the CPU. If this voltage is abnormal, L2 (fixing heater lamp 1), L3 (fixing heater lamp 2), and RL1 (main relay) are turned OFF.

⚠CAUTION:

Do not change the gap between the roller and TH1. When replacing TH1, check the specified mounting dimensions. The RL1 function must not be deactivated under any circumstances.

2. Protection by the hardware circuit

The output voltages from TH1 and TH2 (fixing temperature sensors) are compared with the abnormality judgment reference value in the comparator circuit. If the output voltage from TH1 or TH2 exceeds the reference value, L2 (fixing heater lamp 1), L3 (fixing heater lamp 2), RL1 (main relay) are turned OFF in hardware means.

⚠CAUTION:

Periodically check the TH2 face contacting the roller, and replace TH2 if any abnormality is detected.
Since TH1 (fixing temperature sensor) face does not contact the roller, check the distance from the roller and the sensor orientation if any abnormality is detected.
The RL1 function must not be deactivated under any circumstances.

3. Protection by TS1 (thermostat/U) and TS2 (thermostat/L)

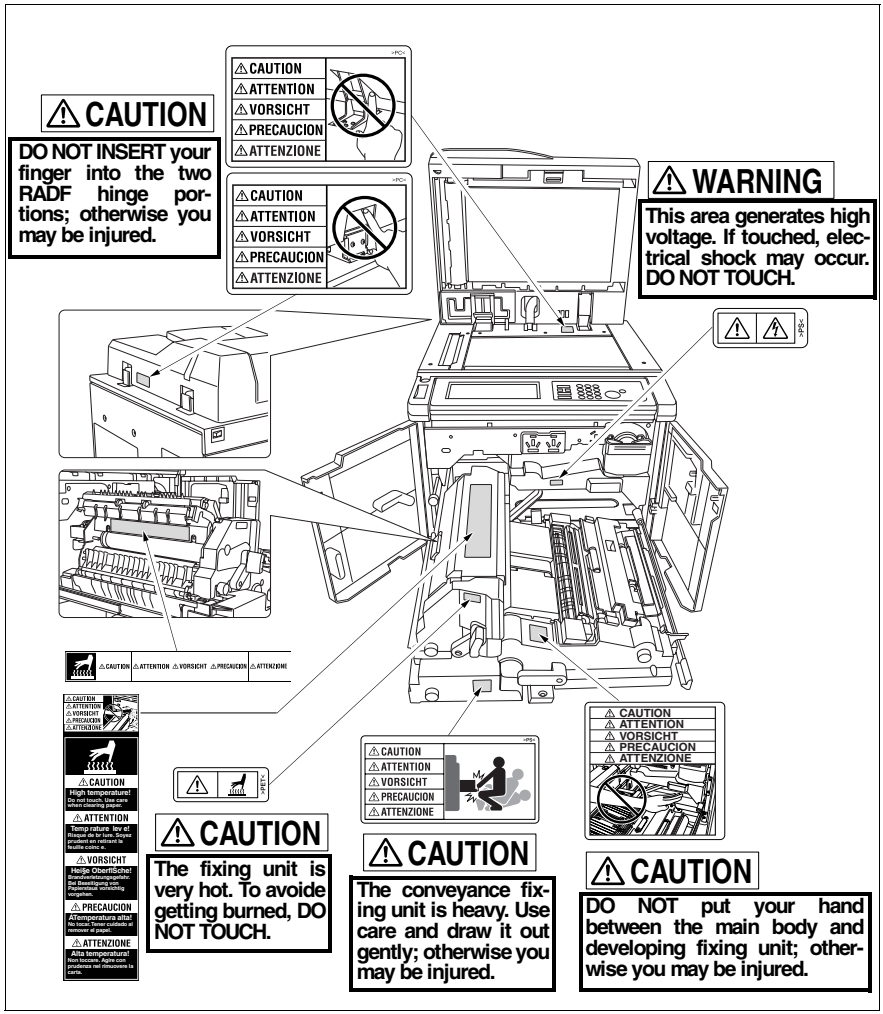
When the temperature of the fixing roller (upper/lower) exceeds the specified value, TSs are turned OFF, thus interrupting the power to L2 (fixing heater lamp/1), L3 (fixing heater lamp/2), and L4 (fixing heater lamp/3) directly.

⚠CAUTION:

Do not use any other electrical conductor in place of TS1 and TS2. Do not change the distance between the roller and TS (thermostat).

INDICATION OF WARNING ON THE MACHINE

Caution labels shown below are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.


⚠ CAUTION
DO NOT INSERT your finger into the two RADF hinge portions; otherwise you may be injured.
⚠ CAUTION
⚠ ATTENTION
⚠ VORSICHT
⚠ PRECAUCION
⚠ ATTENZIONE
⚠ WARNING
This area generates high voltage. If touched, electrical shock may occur. DO NOT TOUCH.
⚠ CAUTION
The fixing unit is very hot. To avoide getting burned, DO NOT TOUCH.
⚠ CAUTION
The conveyance fixing unit is heavy. Use care and draw it out gently; otherwise you may be injured.
⚠ CAUTION
DO NOT put your hand between the main body and developing fixing unit; otherwise you may be injured.

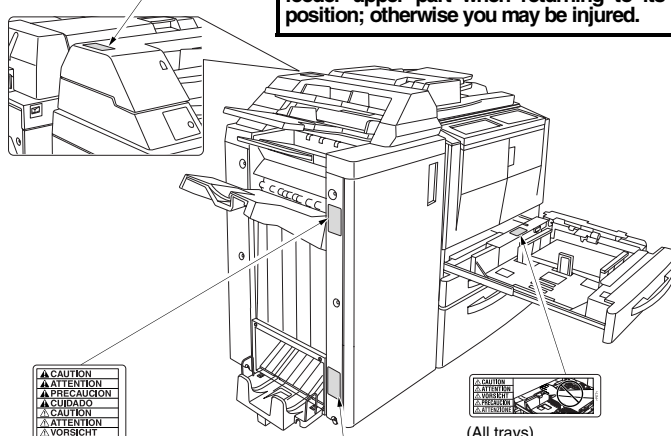
⚠CAUTION

Please adhere to all caution labels to avoid burns or injury.

(Finisher with Cover Inserter B only)

⚠ CAUTION

DO NOT insert your finger into the bottom of the feeder upper part when returning to its original position; otherwise you may be injured.



(FN-6/FN-112 Finisher)

⚠ CAUTION

Use care after opening the paper exit outlet. DO NOT put your hand into it; otherwise you may be injured.ured.

(FN-6 Finisher only)

⚠ CAUTION

Inside the lower paper exit outlet is the roller drive unit. DO NOT put your hand into it; otherwise you may be injured.

(All trays)

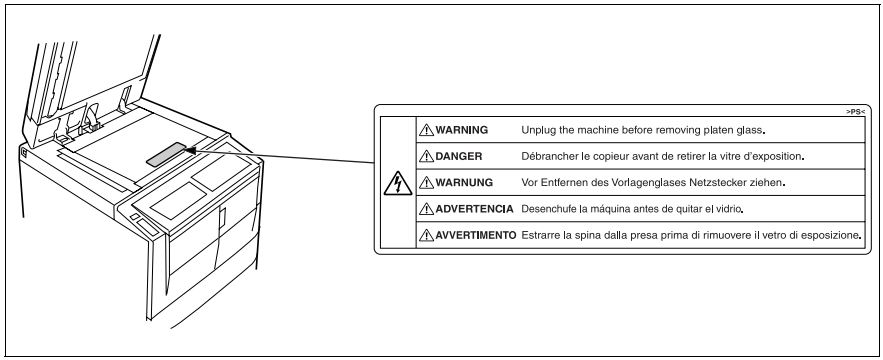
⚠ CAUTION

DO NOT put your hand between the main body and tray; otherwise you may be injured.

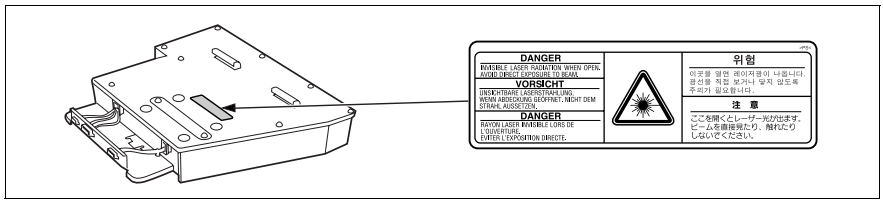
⚠ CAUTION

Please adhere to all caution labels to avoid burns or injury.

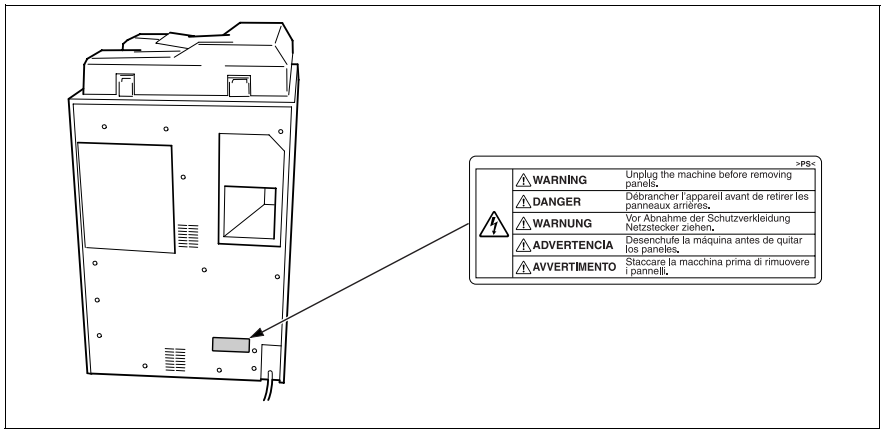
<SCANNER SECTION>


>PS<
WARNING Unplug the machine before removing platen glass.
DANGER Débrancher le copieur avant de retirer la vitre d'exposition.
WARNUNG Vor Entfernen des Vorlagenglases Netzstecker ziehen.
ADVERTENCIA Desenchufe la máquina antes de quitar el vidrio.
AVVERTIMENTO Estrarre la spina dalla presa prima di rimuovere il vetro di esposizione.

<WRITE UNIT>



<REAR COVER>


>PS<
WARNING Unplug the machine before removing panels.
DANGER Débrancher l'appareil avant de retirer les panneaux arrières.
WARNUNG Vor Abnahme der Schutzverkleidung Netzstecker ziehen.
ADVERTENCIA Desenchufe la máquina antes de quitar los paneles.
AVVERTIMENTO Staccare la macchina prima di rimuovere i pannelli.

⚠CAUTION

Please adhere to all caution labels to avoid burns or injury.

1

DISASSEMBLY/ASSEMBLY

This section explains how to disassemble and reassemble the machine. When disassembling and reassembling the machine, follow the precautions given below.

1. Be sure the power cord has been unplugged from the wall outlet.
2. The disassembled parts must be reassembled following the disassembly procedure in reverse unless otherwise specified.
3. Care should be taken not to lose small parts. Care should also be taken not to install small parts in wrong places.
4. Do not operate the machine before installing all the disassembled parts completely.
5. Removal of some screws is prohibited in this section. Never loosen them.

EXTERNAL SECTION

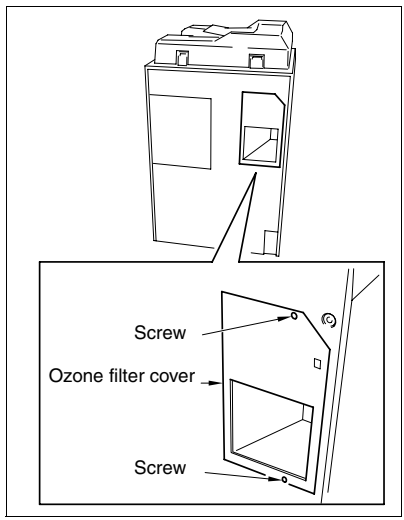
[1] Replacing the Ozone Filter

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

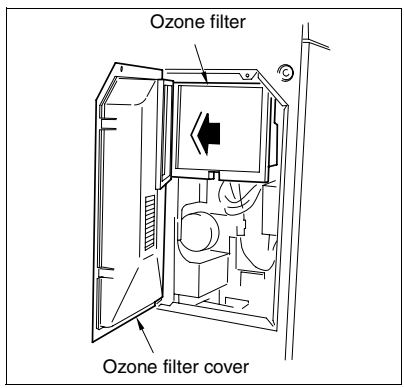
Caution: When replacing the ozone filter, insert it in the opening in the main body as far as it will go.

a. Procedure

(1) Loosen two screws to remove the ozone filter cover.



(2) Replace the ozone filter.



(3) Reinstall the above parts following the removal steps in reverse.

[2] Replacing the Developing Suction Filter

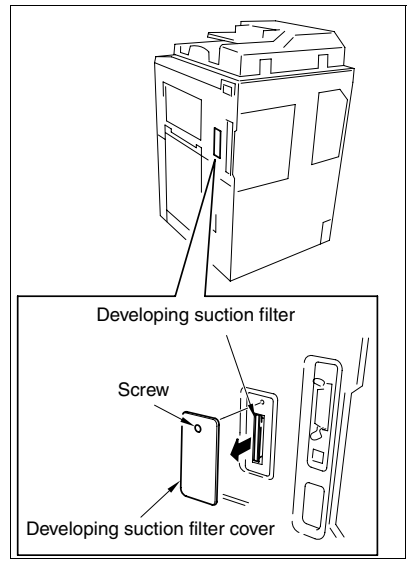
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

Caution: When replacing the developing suction filter, insert it in the opening in the main body as far as it will go.

a. Procedure

(1) Loosen the screw to remove the developing suction filter cover.

(2) Replace the developing suction filter.



(3) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the developing suction filter, the filter-supporting material should face the back of the machine.

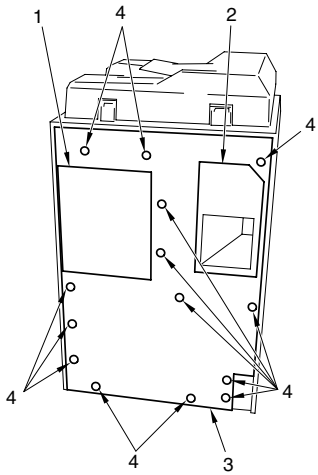
[3] Removing and Reinstalling the External Covers

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

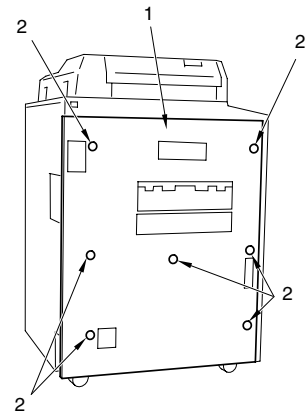
(1) Remove fourteen screws to detach the rear cover.

Caution: The ozone filter cover and the option cover detach together with the rear cover.



1. Option cover
2. Ozone filter cover
3. Rear cover
4. Screws

(2) Remove seven screws to detach the left side cover.

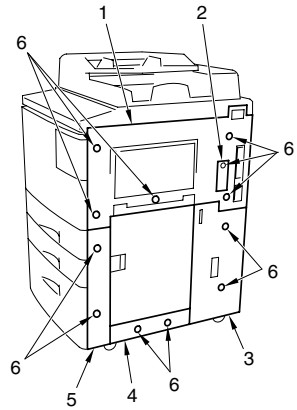


1. Left side cover
2. Screws

(3) Loosen one screw and remove the developing suction filter cover.
(4) Loosen five screws and detach the right side cover (upper).

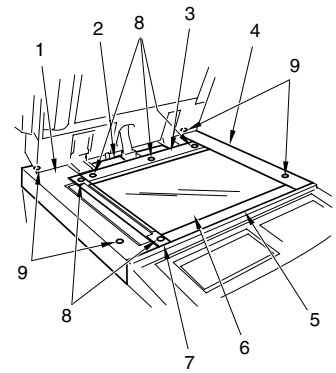
Caution: The developing suction filter cover detaches together with the right side cover (upper).

(5) Loosen two screws to detach the right side cover (lower front).
(6) Loosen two screws to detach the right side cover (lower rear).
(7) Loosen two screws to detach the right side cover (lower middle).



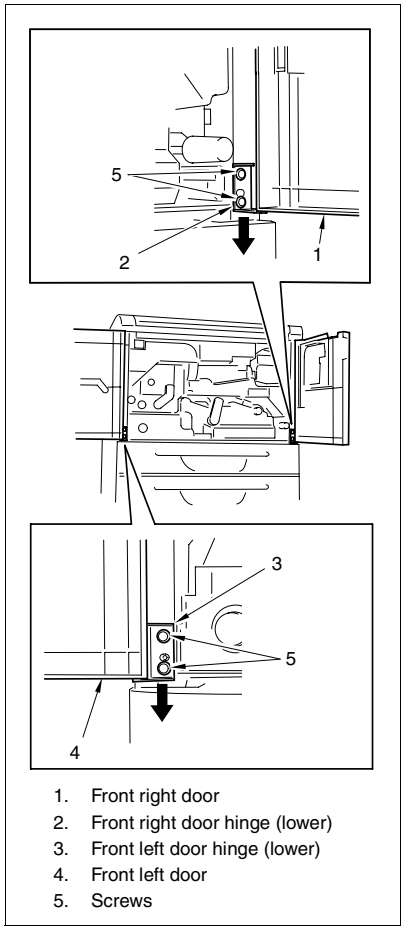
1. Right side cover (upper)
2. Developing suction filter cover
3. Right side cover (lower rear)
4. Right side cover (lower middle)
5. Right side cover (lower front)
6. Screws

(8) Open the RADF.
(9) Remove the two shoulder screws to remove the original stopper plate (left).
(10) Remove the three shoulder screws to remove the original stopper plate (rear).
(11) Remove the platen glass.
(12) Remove two screws to detach the top cover (left).
(13) Remove two screws to detach the top cover (right).
(14) Remove the top cover (middle front) and top cover (middle rear).



1. Top cover (left)
2. Top cover (middle rear)
3. Original stopper plate (rear)
4. Top cover (right)
5. Top cover (middle front)
6. Platen glass
7. Original stopper plate (left)
8. Shoulder screws
9. Screws

(15) Open the front right door and front left door.
(16) Remove two screws to remove the front right door hinge (lower) and front right door.
(17) Remove two screws and remove the front left door hinge (lower) and the front left door.



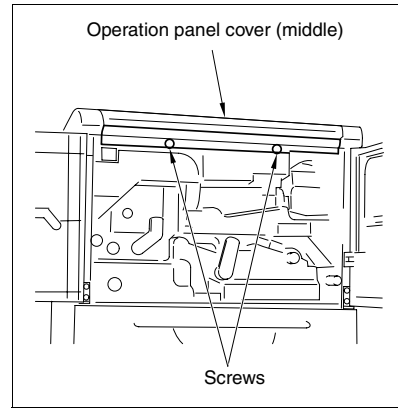
1. Front right door
2. Front right door hinge (lower)
3. Front left door hinge (lower)
4. Front left door
5. Screws

(18) Reinstall the above parts following the removal steps in reverse.

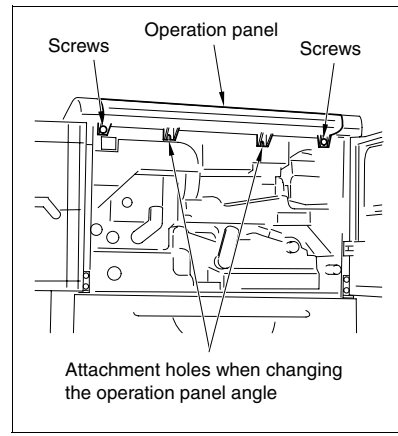
[4] Changing the Operation Panel Attachment Angle and Removing/ Reinstalling

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure
(1) Open the front left door and front right door.
(2) Remove two screws to remove the operation panel cover (middle).



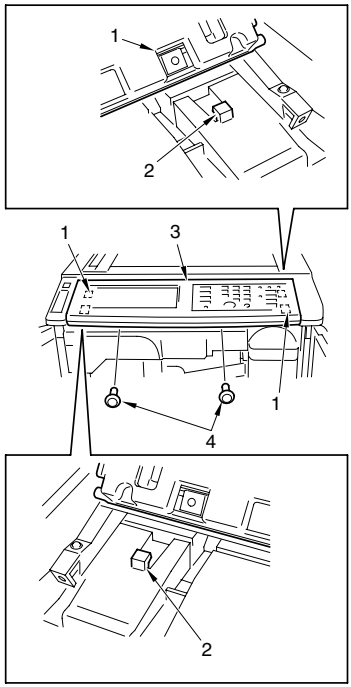
(3) Remove two screws to unlock the operation panel.



(4) When changing the operation panel attachment angle, align the operation panel stopper with the stopper hole at the front side on the bottom of the operation panel and fasten using two screws in the operation cover attachment holes.

Caution1: To remove the operation panel, skip this step and proceed to step (5).

Caution2: When the attachment angle of the operation panel is changed, the operation panel cover and two screws will become unnecessary.



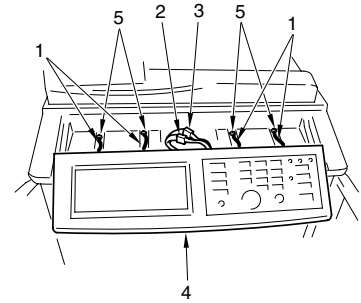
1. Stopper hole
2. Operation panel stopper
3. Operation panel
4. Screws

(5) Remove the relay connectors (CN163, 164).

Caution: Each relay connector consist of two male sides and one female side. Be sure to remove only the male side (shown below).

(6) Remove screws to remove the Ground terminal.

(7) Remove the operation panel.



1. Ground terminal
2. Relay connectors (CN163)
3. Relay connectors (CN164)
4. Operation panel
5. Screws

(8) Reinstall the above parts following the removal steps in reverse.

[5] Resetting the Circuit Breaker

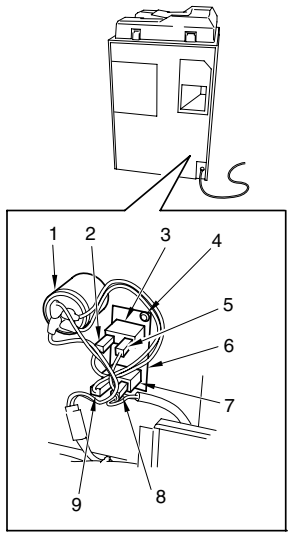
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

⚠Caution:
Connection of cables to circuit breaker 1 and 2 (CBR1, 2) must not be changed.

a. Procedure

(1) Remove the rear cover.

(2) Remove two screws and loosen the circuit breaker assembly.



1. Noise filter (NF)
2. Faston (FT3: noise filter side/black cable)
3. Circuit breaker 1 (CBR1)
4. Screws (2)
5. Faston (FT1: wall outlet side/black cable)
6. Circuit breaker assembly
7. Circuit breaker 2 (CBR2)
8. Faston (FT2: wall outlet side/white cable)
9. Faston (FT4: noise filter side/white cable)

(3) Turn over the circuit breaker assemblies and press the reset button at the center of each circuit breaker.

(4) Reinstall the above parts following the removal steps in reverse.

DRIVE SECTION

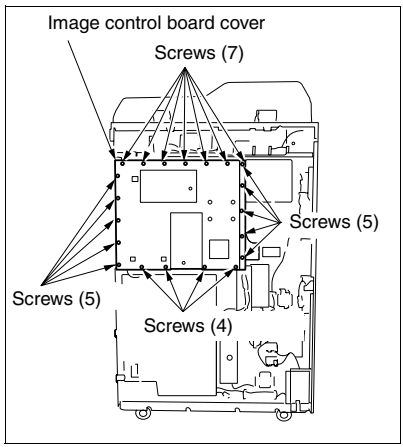
[1] Removing and Reinstalling the Drum Motor(M2)

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

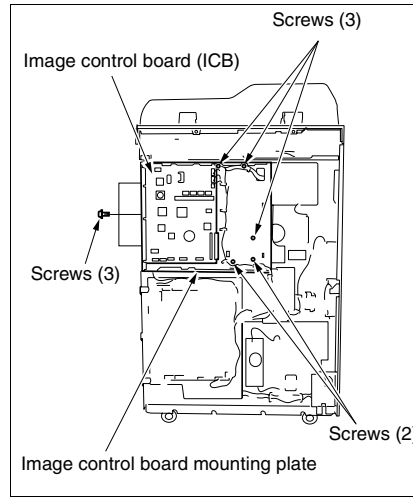
Caution: Be sure to draw the drum unit out of the main body before removing or reinstalling the drum drive motor. If you fail to draw out the drum unit, the cleaning blade may be damaged because the drum rotates when installing or removing the flywheel or gear.

a. Procedure

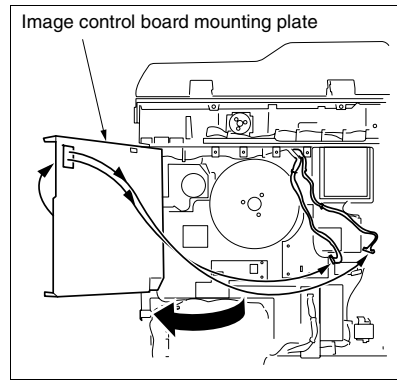
(1) Draw the drum unit out of the main body. (See "DRUM UNIT.")
(2) Remove the rear cover. (See "EXTERNAL SECTION.")
(3) Remove the developing suction cover and right cover (top). (See "EXTERNAL SECTION.")
(4) Remove twenty-one screws and remove the image control board cover.



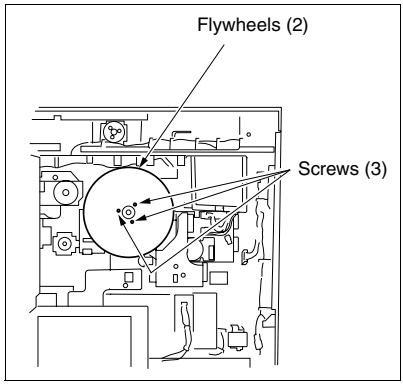
(5) Remove five screws at the rear and three screws on the right side and remove all connectors from the image control board (ICB).



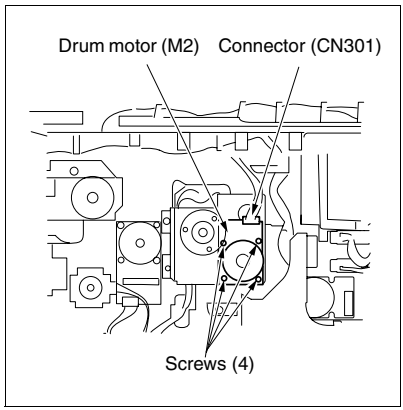
(6) Remove each cable from wire guide.
(7) Remove one cable from the scanner board and two cables from the write unit, draw then through the hole and open the image control board mounting plate.



(8) Remove three screws and remove the two flywheels.



(9) Remove the connector (CN301).
(10) Remove four screws and remove the drum motor (M2).



(11) Reinstall the above parts following the removal steps in reverse.

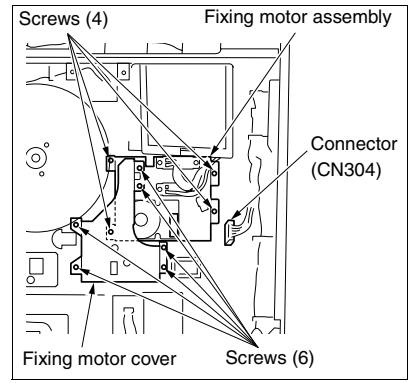
[2] Removing and Reinstalling the Fixing Input Gear

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

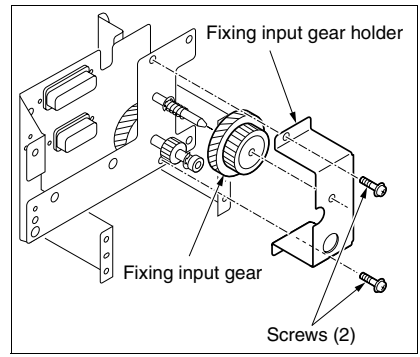
a. Procedure

(1) Open the image control bard mounting board.
(2) Remove six screws and remove the fixing motor cover.
(3) Pull out the connector (CN304), remove four screws to remove the fixing motor assembly.

Caution: Hold the fixing motor assembly with your hand because it is connected to the main body with cable.



(4) Remove two screws to remove the fixing input gear holder.
(5) Pull out the fixing input gear from the shaft.

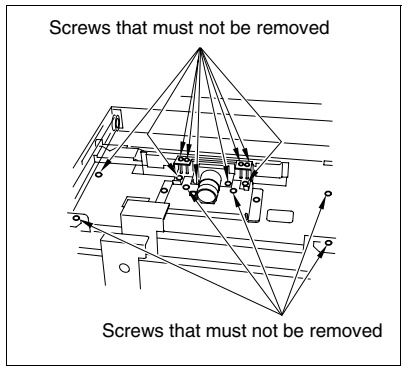


(6) Reinstall the above parts following the removal steps in reverse.

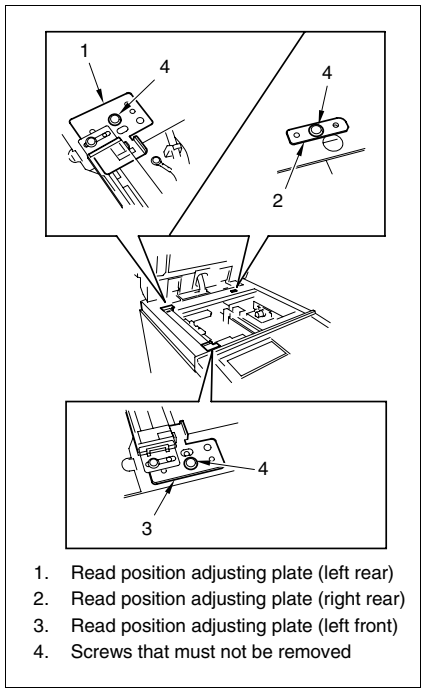
SCANNER SECTION

[1] Screws that Must not be Removed

a. 14 screws securing the CCD unit



b. Read position adjusting plate screw (1 each)



1. Read position adjusting plate (left rear)
2. Read position adjusting plate (right rear)
3. Read position adjusting plate (left front)
4. Screws that must not be removed

[2] Removing and Reinstalling the CCD Unit

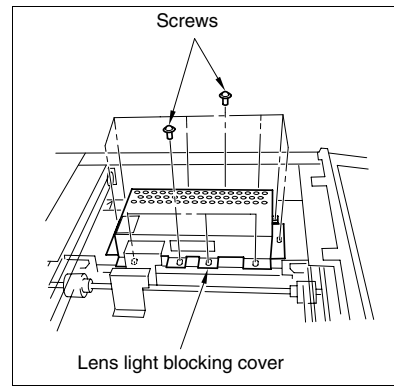
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

Caution: Be sure to adjust the image after installing the CCD unit (See "ADJUSTMENTS.")

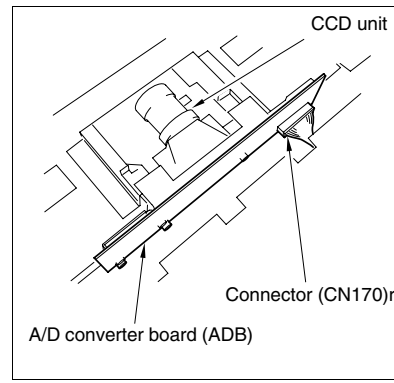
a. Procedure

(1) Remove the right side cover (top), left side cover, original stopper plates (left and rear), platen glass and top cover (right, left, front center, and rear center). (See "EXTERNAL SECTION.")

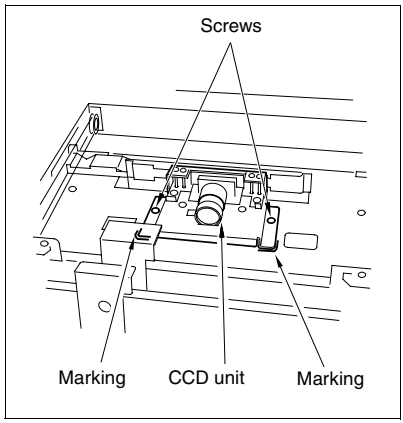
(2) Remove eleven screws to remove the lens light blocking cover.



(3) Remove the connector (CN170) from the A/D converter board (ADB).



(4) Remove two screws to remove the CCD unit.



Caution: Mark the place where the CCD unit is installed before removing it.

(5) Reinstall the above parts following the removal steps in reverse.

[3] Replacing the Exposure Lamp

⚠Caution1:
Be sure the power cord has been unplugged from the wall outlet.

⚠Caution2:
Do not touch the exposure lamp with bare hands.

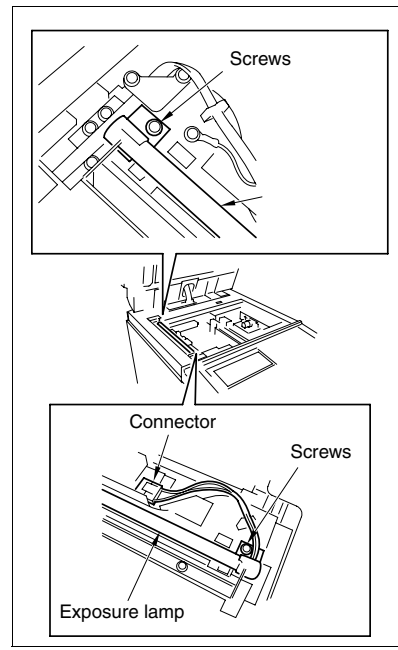
Caution: Be sure to check the image after installing the exposure lamp. (See "ADJUSTMENTS.")

a. Procedure

(1) Remove the original stopper plates (left and rear), platen glass and top cover (right, middle front, and middle rear). (See "EXTERNAL SECTION.")

(2) Move the exposure unit to the notch in the main body frame on the paper exit side.

(3) Remove the connector and two screws, then remove the exposure lamp.



(4) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Exposure Unit

⚠**Caution:**

Be sure the power cord has been unplugged from the wall outlet.

Caution1: When installing the exposure unit, use the optics unit positioning jig.

Caution2: Be sure to perform image adjustment after installing the exposure unit. (See "ADJUSTMENT.")

a. Procedure

(1) Remove the right side cover (top), left side cover, original stopper plates (left and rear), platen glass and top cover (right, left, front center, and rear center). (See "EXTERNAL SECTION.")

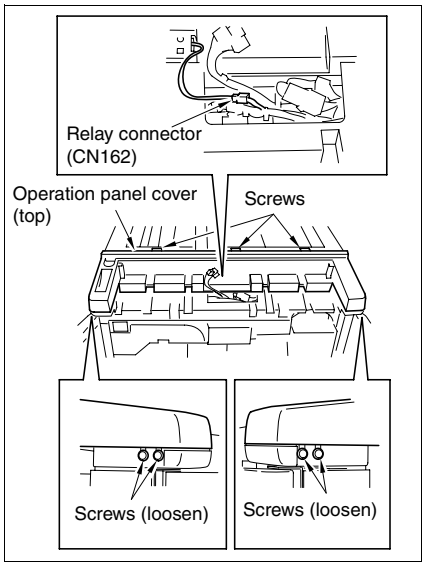
(2) Remove the operation panel. (See "EXTERNAL SECTION.")

(3) Remove the relay connector (CN162).

Caution: Each relay connector consist of two male sides and one female side. Be sure to remove only the male side (shown below) of the CN162 connector.

(4) Loosen the left and right screws on the operation panel cover (top).

(5) Remove three screws and remove the operation unit cover (top).



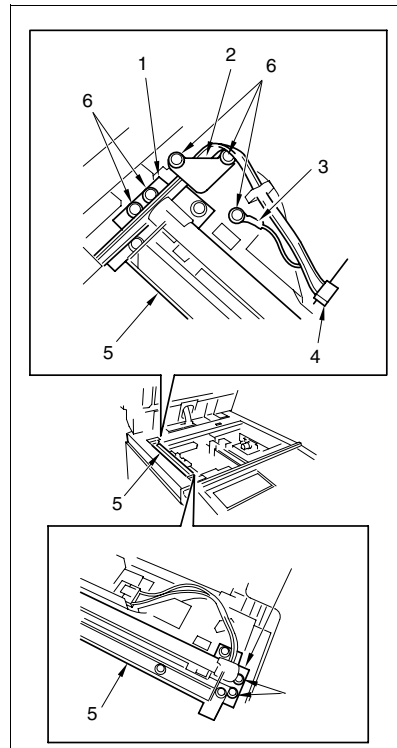
(6) Move the exposure unit to the notch in the main body frame on the paper exit side.

(7) Remove two screws to detach the cord clamp (B).

(8) Remove one screw to remove the ground terminal.

(9) Disconnect the connector (CN630).

(10) Remove four screws to detach the exposure unit.



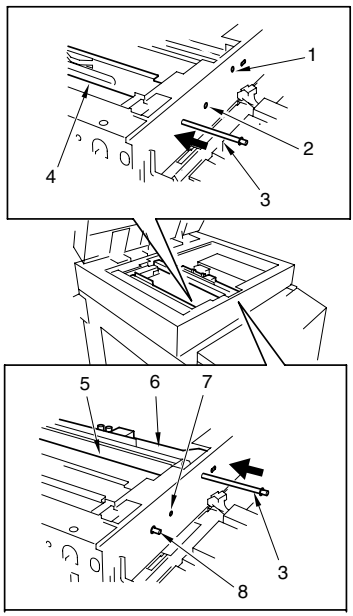
1. Optical wire fastener
2. Cord clamp (B)
3. Ground terminal
4. Connector (CN630)
5. Exposure unit
6. Screws

b. Installation procedure

(1) Move the V-mirror unit toward the paper exit side, then insert the optics positioning jigs from the front to secure the V-mirror unit. Ensure that the optics positioning jigs pass through the V-mirror unit.

(2) Insert the optics positioning jigs in the holes at the exposure unit mounting position from the front.

(3) Slide the exposure unit to the paper exit side until it touches the optics unit positioning jig.



1. Exposure unit fixing hole
2. Unused hole
3. Optics unit positioning jig
4. V-mirror unit
5. Stopping surface
6. Exposure unit
7. For exposure unit positioning
8. V-mirror unit fixing hole (left)

(4) Install the exposure unit to the optics wire mounting bracket with four screws.

(5) Remove two optics unit positioning jigs.

(6) Reverse the removal procedure to reinstall the removed parts.

[5] Installing the Optics Wire

⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

Caution1: When winding the optics wire around the pulley, be sure to run the wire tightly so that it does not ride on the side of the pulley.

Caution2: When re-tensioning or replacing the optics wire, be sure to use the optics positioning jig.

Caution3: Be sure to perform image adjustment after replacing or re-installing the wire (See "ADJUSTMENT.")

a. Procedure

(1) Remove the exposure unit.

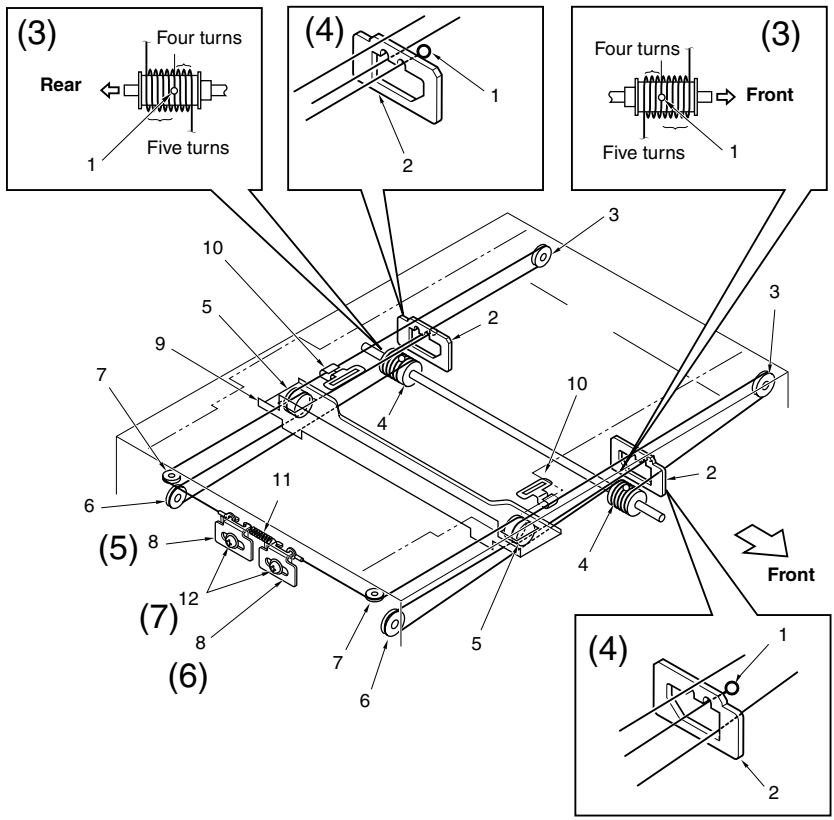
(2) Move the V-mirror unit toward the paper exit side then insert the optics positioning jigs from the front to secure the V-mirror unit. Ensure that the optics positioning jigs pass through the V-mirror unit.

(3) Place the metal bead at the midpoint of each optics wire in the mounting hole in the drive pulley. Starting at this point, wind the optics wire five turns to the outside and four times to the inside on the drive pulley.

Caution1: Ensure that there is a metal bead at the end of the outer wire, and a wire terminal at the end of the inner wire.

Caution2: Pull out the outer wire from above the drive pulley in the paper exit direction, and the inner wire from under the drive pulley in the paper feed direction.

(4) After winding the outer wire, secure it to the wire stopper via the outside of pulley 1 and V-mirror pulley through the notch in the wire stopper.



1. Metal bead
2. Wire stopper
3. Pulley 1
4. Drive pulley
5. V-mirror pulley
6. Pulley 2
7. Pulley 3
8. Spring fixing plate
9. V-mirror unit
10. Exposure unit mounting piece
11. Spring
12. Screws

Caution: There are two grooves in the wire stopper. Ensure that the outer groove is at the rear and the inner groove is at the front.

(5) Reverse the inner wire at pulley 2, pass it along the inside of the V-mirror pulley and pulley 3, then attach the wire terminal to the spring fixing plate. At this time, secure the spring fixing plate temporarily with one screw.

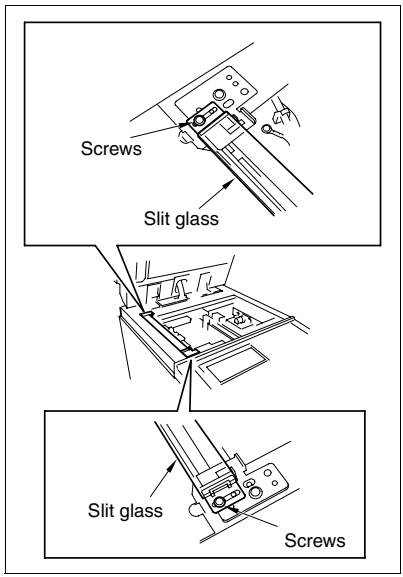
(6) Install the other wire following the same procedure.

(7) Loosen each screw that was tightened temporarily, install the spring on the spring fixing plate, and tighten each screw.

[6] Cleaning the Slit Glass and Platen Glass

⚠**Caution:**
Be sure the power cord has been unplugged from the wall outlet.

(1) Remove the original stopper plates (left and rear), platen glass, and top cover (right, left, front center, and rear center). (See "EXTERNAL SECTION.")
(2) Remove two screws to detach the slit glass.
(3) Place the removed slit glass and platen glass on a rag and clean with drum cleaner and cleaning pad.



(4) Reinstall the above parts following the removal steps in reverse.

WRITE SECTION

[1] Removing and Reinstalling the Write Unit

⚠Warning:

(1) Do not energize the write unit when it is not in the correct position.

(2) Never remove the write unit cover and the polygon unit cover.

(3) Never look directly into the laser beam. It can cause blindness.

(4) Never remove the write unit for at least two minutes after turning OFF the main switch.

⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

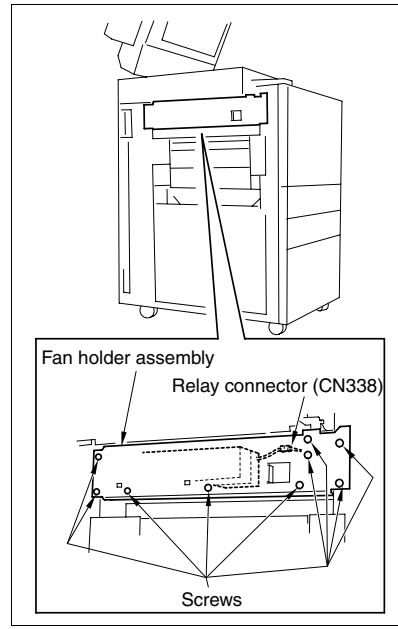
a. Procedure

(1) Remove the left side cover. (See "EXTERNAL SECTION.")

(2) Remove nine screws to detach the fan holder assembly.

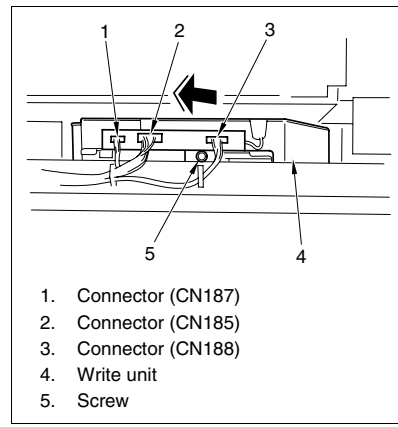
(3) Remove the relay connector (CN338).

Caution: Each relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the CN338 connector.



(4) Remove the three connectors (CN185, 187, 188).

(5) Loosen the screw to draw out and remove the write unit.



1. Connector (CN187)
2. Connector (CN185)
3. Connector (CN188)
4. Write unit
5. Screw

(6) Reinstall the above parts following the removal steps in reverse.

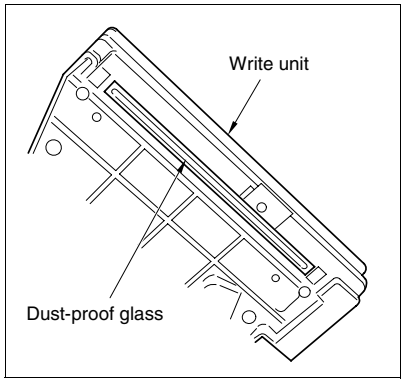
[2] Cleaning the Dust-proof Glass

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the write unit.

(2) Clean the dust-proof glass at the bottom of the write unit with cleaning pad and blower brush.



(3) Reinstall the above parts following the removal steps in reverse.

DRUM UNIT

[1] Removing and Reinstalling the Drum Unit

⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

Caution1: Be sure to put a drum cover over the removed drum unit and store the drum unit in a dark place.

Caution2: When installing or removing the drum unit, do not rotate it in the direction opposite to the specified one. Rotating the drum unit in the opposite direction during copy operation could damage the cleaning blade.

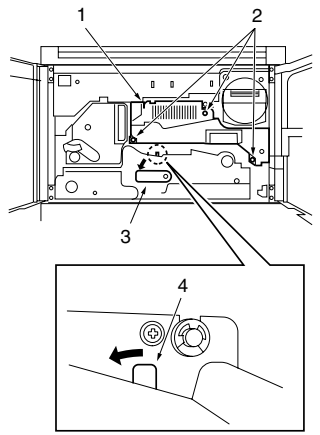
Caution3: When installing or removing the drum unit, take care not to touch the separation claw.

a. Procedure

(1) Open the left and right front doors.

(2) While pressing the solenoid release lever on top of the ADU rack to the left, flip the ADU rack pullout lever to the left.

(3) Loosen three screws to remove the drum cover.



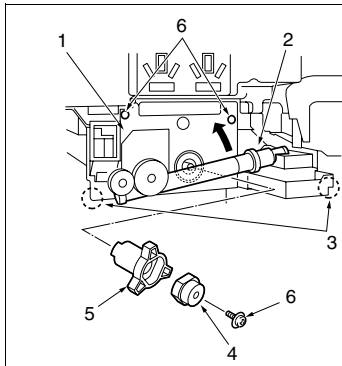
1. Drum cover
2. Screws
3. ADU rack pullout lever
4. Solenoid release lever

(4) Remove the two screws securing the drum unit.

(5) Release the toner supply pipe in the direction of the arrow.

(6) Remove the screw securing the coupling to detach the drum shaft coupling and drum coupling.

(7) Hold the two sections shown in the figure and pull out the drum unit.



1. Drum unit
2. Toner supply pipe
3. Hold here
4. Drum shaft coupling
5. Drum coupling
6. Screws

(8) Reinstall the above parts following the removal steps in reverse.

Caution: To install the coupling, see "[2] Installing the Coupling."

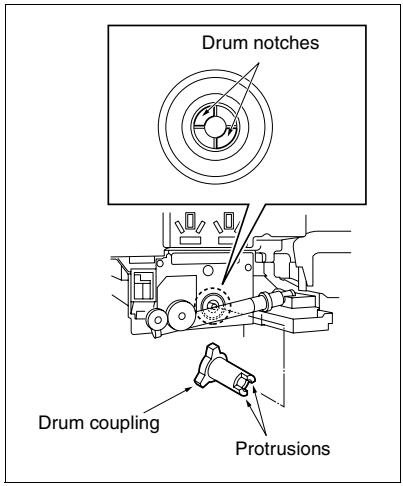
[2] Installing the Coupling

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

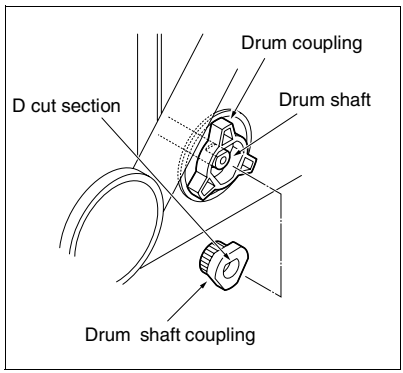
a. Procedure

(1) Clean the outer surface of the drum coupling and drum shaft coupling with drum cleaner and cleaning pad.

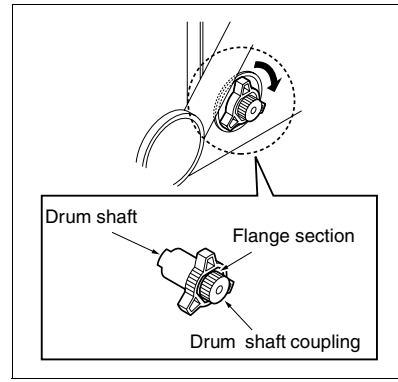
(2) Insert the drum coupling aligning the protrusions on the drum coupling with the notches in the drum.



(3) Insert the drum shaft coupling so that the D cut section of the drum shaft coupling matches the drum shaft.



(4) Turn the head of the drum coupling clockwise so that the flange section on the drum shaft coupling is flush.



(5) Tighten with screw.

[3] Removing, Cleaning, and Reinstalling the Drum

⚠**Caution:**
Be sure the power cord has been unplugged from the wall outlet.

Caution1: Be careful not to touch the drum or the cleaning blade with bare hands, or damage them.

Caution2: When leaving the drum, be sure to put the drum cover over the drum and store it in a dark place.

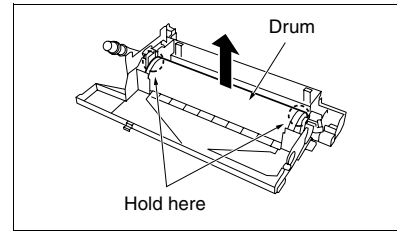
Caution3: When reinstalling the drum, cleaning blade, and toner guide roller, apply setting powder to the entire surface of the drum and also to the cleaning blade regardless of whether the parts are new or old.

Caution4: After applying setting powder to the drum, perform the following before installing the drum unit in the main body.

1) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).
2) When installing a new drum, be sure to enter mode 25 and select "Copy Count by Parts to be Replaced" to reset drum counter. (See "ADJUSTMENT.")

a. Procedure

(1) Remove the drum unit from the main body.
(2) Remove the charging corona unit, developing unit, cleaning blade, and toner guide roller from the drum unit. (See "CHARGING CORONA UNIT SECTION," DEVELOPING UNIT," and "CLEANING/TONER RECYCLE SECTION.")
(3) Supporting the drum at both ends with your fingers so that the drum surface is not damaged, slowly remove it upward (front side first).
(4) Clean the toner scattered around the drum installation area using a blower brush and cleaning pad.



(5) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Separation Claws and Separation Claw Solenoid

⚠**Caution:**
Be sure the power cord has been unplugged from the wall outlet.

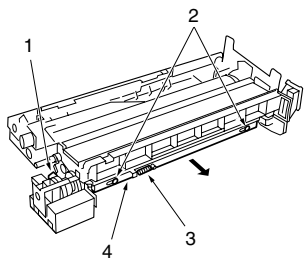
Caution1: Take care not to damage the drum when removing the separation claws.

Caution2: Note the orientation and position of the separation claws when reinstalling them.

Caution3: Do not touch the cleaning blade and drum with bare hands.

a. Procedure

(1) Remove the drum unit from the main body.
(2) Remove the drum.
(3) Remove the connector (CN363) and separation swing spring.
(4) Remove two screws and detach the separation guide plate assembly.



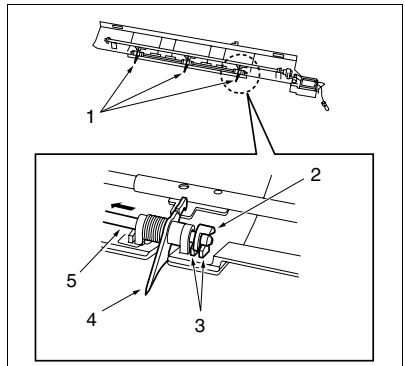
1. Connector (CN363)
2. Screws
3. Separation swing spring
4. Separation guide plate assembly

(5) Remove the stop ring, slide the shaft, and remove the three separation claws.

Caution1: Clean the shaft with drum cleaner and a cleaning pad when installing. The separator claws cannot move smoothly if they are installed with toner remaining on the shaft.

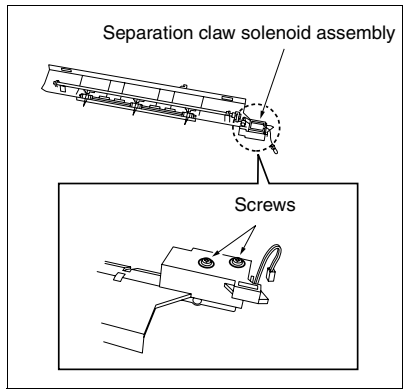
Caution2: When installing, insert the retaining ring between the ribs.

Caution3: After installing the separation claws, check that they move smoothly.

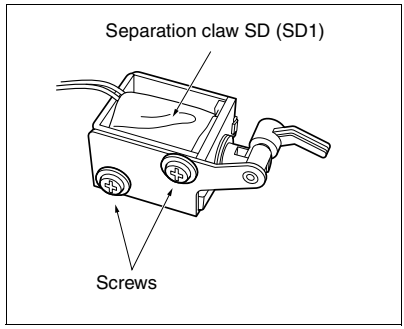


1. Separation claws
2. Stop ring
3. Rib
4. Separation claw
5. Shaft

(6) Remove two screws and remove the separator claw solenoid assembly.

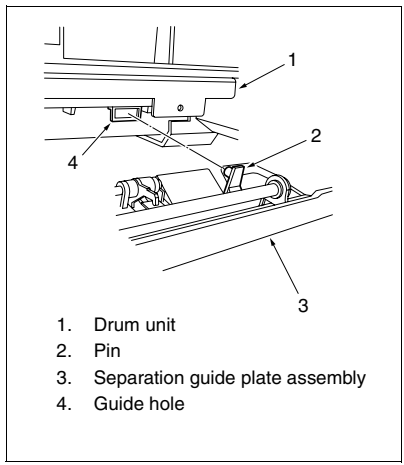


(7) Remove two screws and detach the separation claw SD (SD1).



(8) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the separation claw unit, match the pin and guide hole shown in the figure.



1. Drum unit
2. Pin
3. Separation guide plate assembly
4. Guide hole

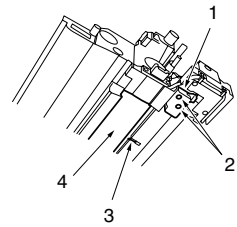
[Reference]

When removing the separation claw solenoid (Normally, it should not be removed except when replacing the solenoid).

(1) Install the separation claw unit to the drum unit.

(2) Tighten the solenoid screw when the claw closest to the drum touches the drum.

(Bottom surface of the drum unit)



1. Separation claw SD (SD1)
2. Screws
3. Separation claw
4. Drum unit

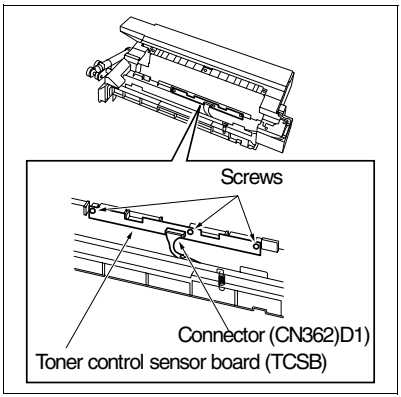
(3) Set the drum unit to the main body and check that the tips of the separation claws are off the drum. (Standard clearance: More than 0 mm up to 1mm.)

[5] Removing and Reinstalling the Toner Control Sensor Board

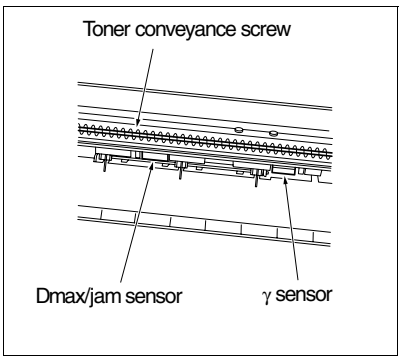
⚠ Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the drum unit from the main body.
(2) Remove the drum.
(3) Remove the separator claw solenoid assembly.
(4) Remove the connector (CN362).
(5) Remove three screws and remove the toner control sensor board.



(6) Clean the sensors of the toner control sensor board (the Dmax/jam sensor at the front and the γ sensor at the back) using a blower brush, drum cleaner, and cleaning pad.



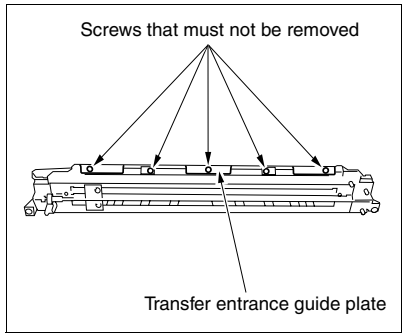
(7) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the toner control sensor board, tighten the screws pulling it up until it stops.

CORONA UNIT

[1] Screws that Must not be Removed

a. Five screws securing the transfer entrance guide plate



Caution: Do not strain the transfer entrance guide plate and guide rollers, for example, pressing down on them strongly.

Caution: Take care not to damage the edge of the transfer entrance guide plate since it is deformed easily.

[2] Removing and Reinstalling the Charging Corona Unit

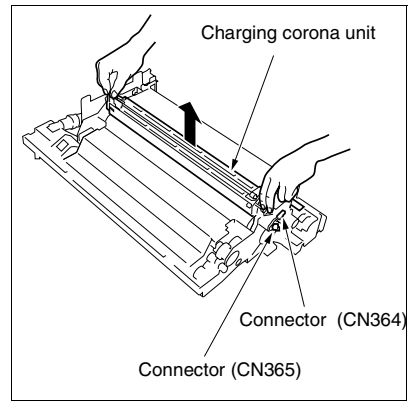
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

Caution: When removing the charging corona unit, do not touch the mesh of the charging corona unit control plate.

a. Procedure

(1) Remove the drum unit from the main body. (See "DRUM UNIT.")

(2) Disconnect the two connectors (CN364, 365). Remove the charging corona unit by holding it at the positions shown below with both hands.



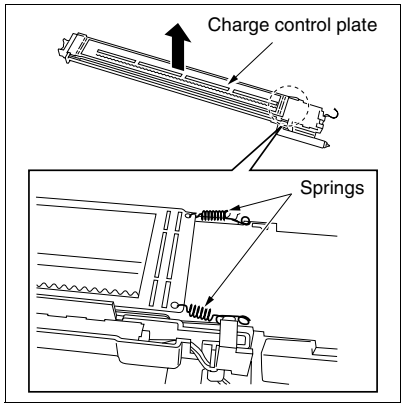
(3) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Charge Control Plate

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the charging corona unit.
(2) Remove the two springs and remove the charge control plate.



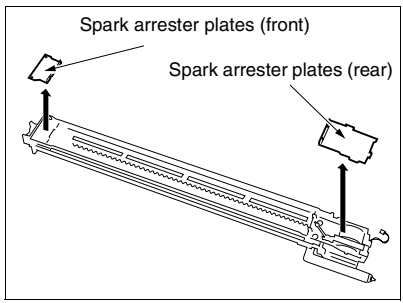
(3) Reinstall the above parts following the removal steps in reverse.

[4] Replacing the Charging Wires

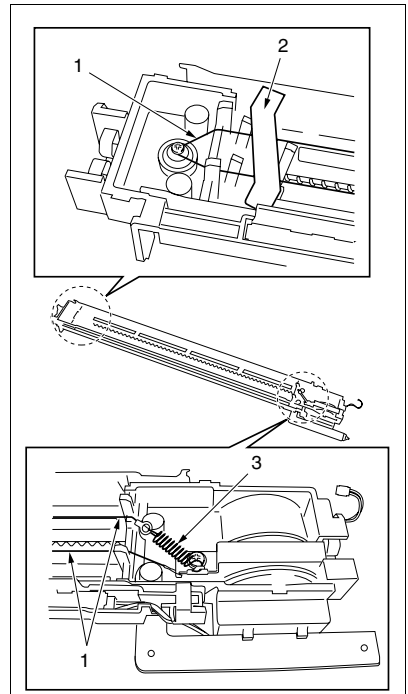
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the charging corona unit.
(2) Remove the charge control plate.
(3) Remove the spark arrester plates (front and rear).



(4) Remove the charge control plate cleaner.
(5) Remove the spring and remove the charging wire.



1. Charging wire
2. Charge control plate cleaner
3. Spring

(6) Reinstall the above parts following the removal steps in reverse.

[5] Removing and Reinstalling the Charging Wire Cleaning Unit

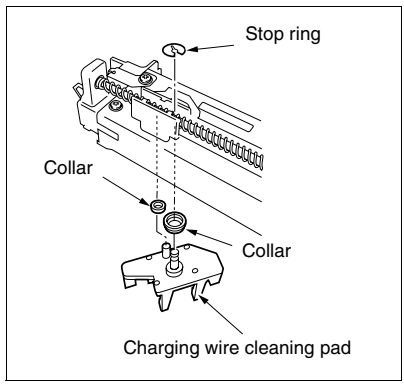
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

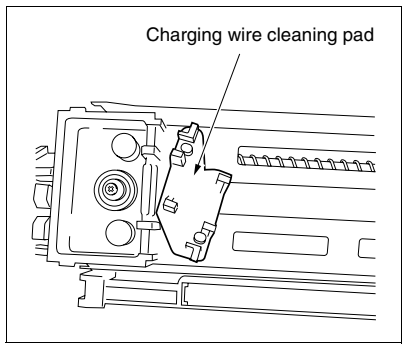
(1) Remove the charging wire.

(2) Remove the stop ring and remove the charging wire cleaning pad.

Caution1: When removing the charging wire cleaning pad, be careful not to drop the two collars.



Caution2: When installing the charging wire cleaning pad, install the pad in the orientation shown below. Also, do not forget to attach the two collars.



(3) Reinstall the above parts following the removal steps in reverse.

[6] Removing and Reinstalling the PCL

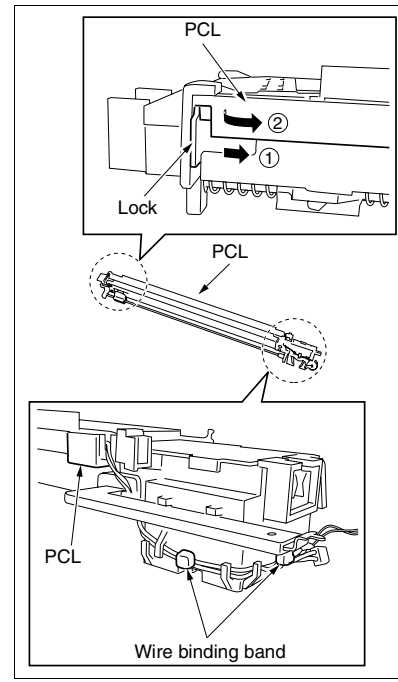
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the charging corona unit.

(2) Disconnect the wire binding band at two locations.

(3) Release the lock and remove the PCL.



(4) Reinstall the above parts following the removal steps in reverse.

[7] Cleaning the Charging Corona Unit/ PCL

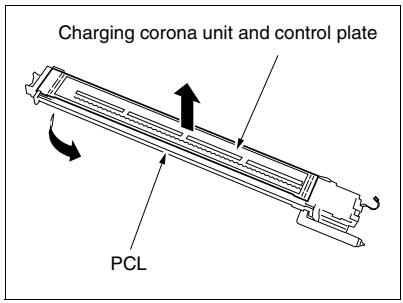
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the charging corona unit.
(2) Remove the charge control plate and PCL.
(3) Place the charge control plate on a flat surface and clean by gently tapping with a cleaning pad moistened with drum cleaner. Next, remove any remaining dirt with a blower brush.

Caution: Take care not to damage the mesh of the charge control plate during cleaning.

(4) Clean the PCL with a cleaning pad moistened with drum cleaner.

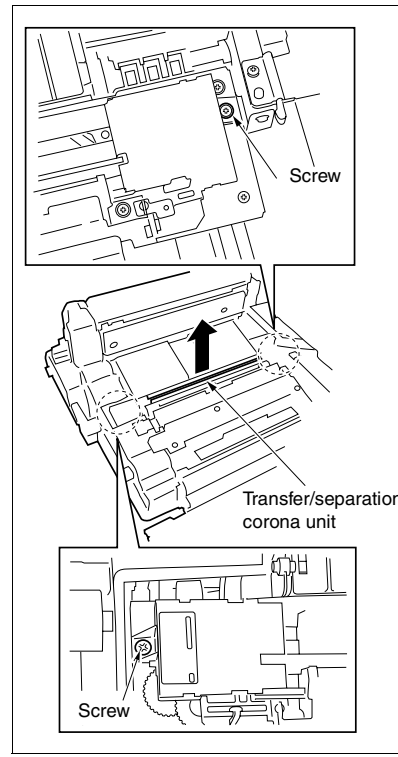


[8] Removing and Reinstalling the Transfer/Separation Corona Unit

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw the ADU frame from the main body. (See "ADU UNIT.")
(2) Loosen two screws to remove the transfer/separation corona unit.



(3) Reinstall the above parts following the removal steps in reverse.

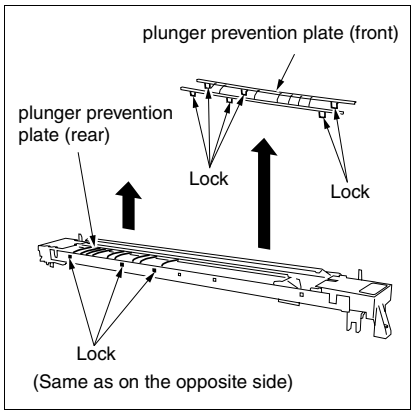
Caution: When installing the transfer/separation corona unit, make sure the cleaning gear coupling is engaged properly.

[9] Removing and Reinstalling the Plunger Prevention Plate

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw the ADU frame from the main body. (See "ADU UNIT.")
(2) Remove the transfer/separation corona unit.
(3) Release the six locks and remove the plunger prevention plate (front).
(4) Release the six locks and remove the plunger prevention plate (rear).



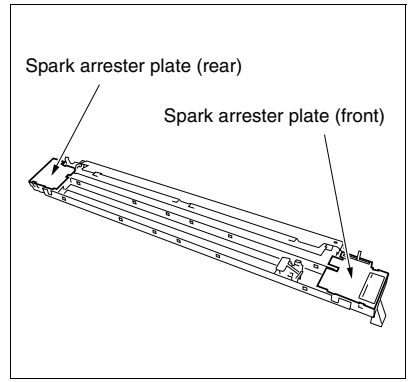
(5) Reinstall the above parts following the removal steps in reverse.

[10] Replacing the Transfer/Separation Wires and Transfer/Separation Wire Cleaning Block

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw the ADU frame from the main body. (See "ADU UNIT.")
(2) Remove the transfer/separation corona unit.
(3) Remove the plunger prevention plate.
(4) Remove the spark arrester plates (front and rear).

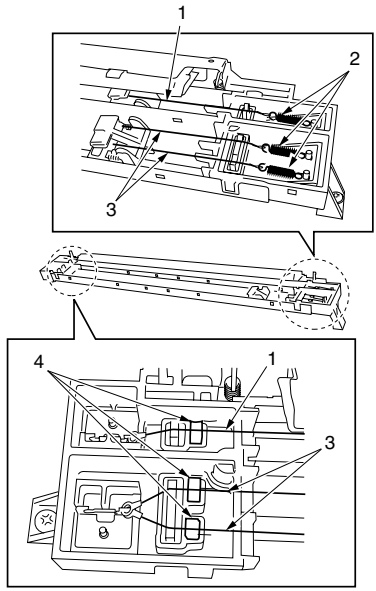


(5) Remove the springs of wires (one each).

Caution: When installing the springs, bend the edge of each spring inside.

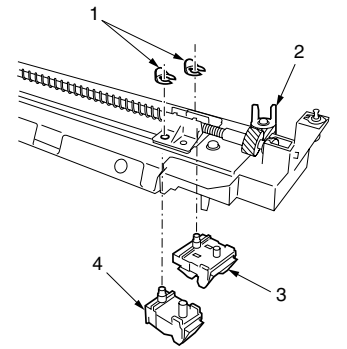
(6) Release and remove three wires from each cleaning block.

Caution: Be careful not to drop and lose the support rubber when removing the wire.



1. Transfer wire
2. Spring
3. Separation wire
4. Support rubber

(7) Turn the transfer/separation corona unit upside down, remove the stop rings, and remove the transfer wire cleaning block and separation wire cleaning block from the front side.



1. Stop rings
2. Coupling
3. Separation wire cleaning block
4. Transfer wire cleaning block

(8) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the transfer/separation wires, check that the coupling of the cleaning pad drive gear is engaged correctly.

[11] Removing and Reinstalling the TSL Unit

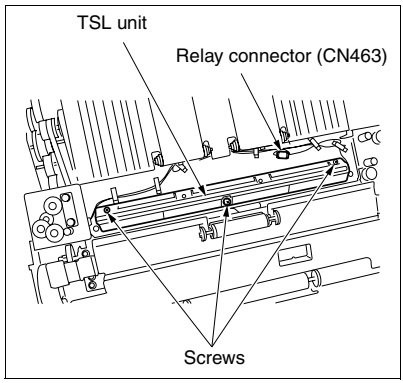
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw the ADU frame from the main body. (See "ADU UNIT.")
(2) Remove the transfer/separation corona unit.
(3) Remove the relay connector (CN463).

Caution: A relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the CN463 connector.

(4) Remove the three screws and remove the TSL unit.



(5) Reinstall the above parts following the removal steps in reverse.

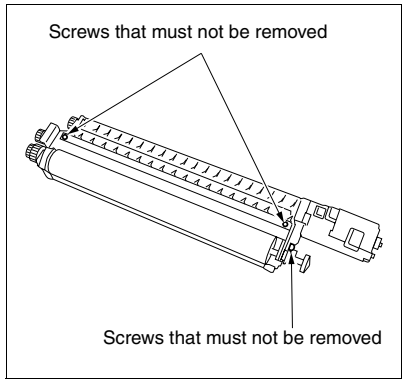
DEVELOPING UNIT

[1] Screws that must not be Removed

a. Procedure

(1) Two screws securing the toner transfer regulation plate.

(2) One screw securing the magnet angle adjusting knob.



[2] Removing and Reinstalling the Developing Unit

⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

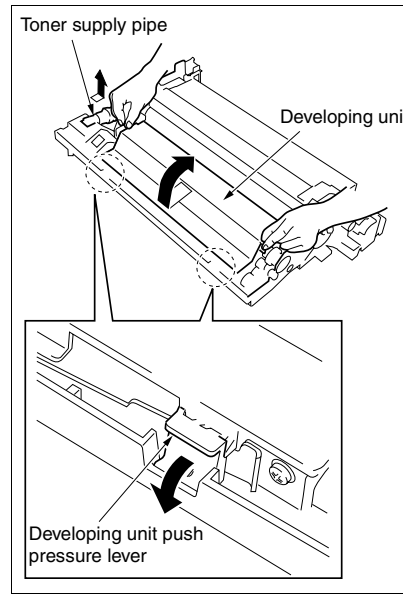
a. Procedure

(1) Draw out the drum unit from the main body. (See "DRUM UNIT.")

(2) Release the toner supply pipe.

(3) Release the developing unit push pressure lever.

(4) Supporting the developing unit at the positions shown below with both hands, remove it from the drum unit.



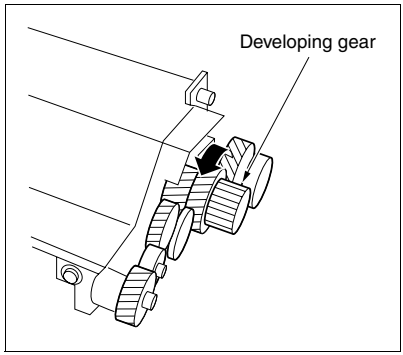
(5) Reinstall the above parts following the removal steps in reverse.

[3] Replacing the Developer

Caution1: When replacing the developer in the developing unit, take care not to allow dirt to get into it.

Caution2: To rotate the developing sleeve, rotate the developing gear counter-clockwise.

Caution3: Never rotate the developing gear clockwise.

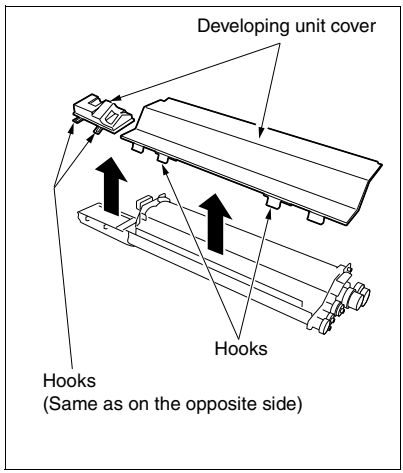


a. Procedure

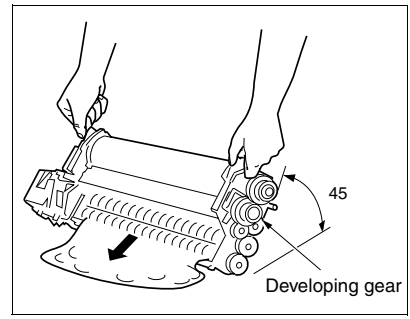
(1) Draw out the drum unit from the main body. (See "DRUM UNIT.")

(2) Remove the developing unit from the drum unit.

(3) Release the hook of the developing unit cover and remove it upward.



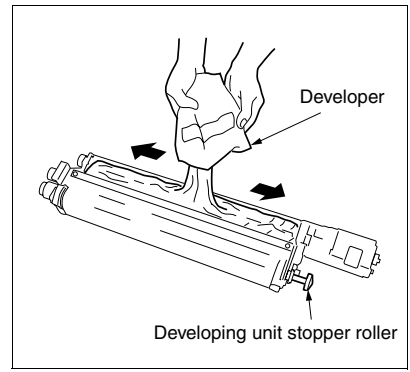
(4) Tilt the developing unit about 45° and rotate the developing gear counterclockwise to discharge all of the developer adhering to the inside of the developing unit and magnet roller.



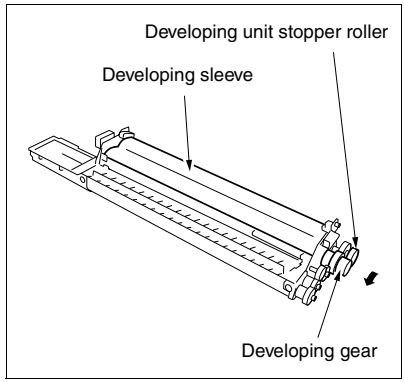
(5) Supply fresh developer evenly from the top of the agitator screws.

(6) Rotate the developing gear until the developer enters the developing unit.

(7) Repeat steps (5) and (6) to supply all of the developer.



(8) Rotate the developing gear counterclockwise to check that the developer bristles along the entire length of the developing sleeve.



(9) Install the developing unit cover, then install the developing unit in the drum unit.

Caution: After installing the developing unit in the drum unit, make sure the developing unit stopper roller is in contact with the developing unit stopper plate (allocation of DSD).

[4] Cleaning the Developing Unit Bias shaft

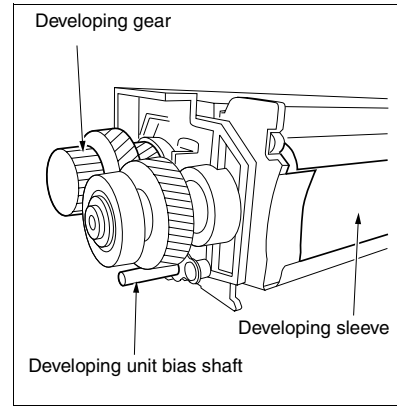
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the drum unit from the main body. (See "DRUM UNIT.")

(2) Remove the developing unit from the drum unit.

(3) Wipe the dirt on the developing unit bias shaft with cleaning pad.



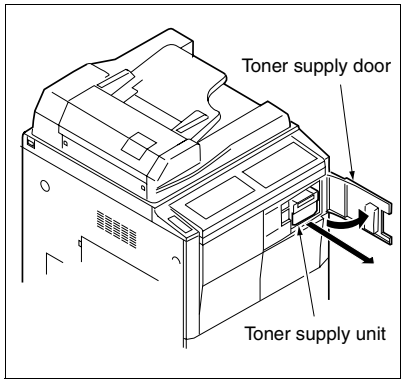
(4) Reinstall the above parts following the removal steps in reverse.

TONER SUPPLY UNIT

[1] Replacing and Cleaning the Toner Cartridge

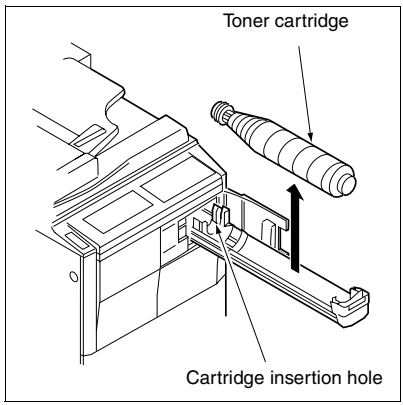
a. Procedure

(1) Open the toner supply door and pull the toner supply unit forward.



(2) Remove the toner cartridge.

(3) After removing the toner cartridge, clean the area around the toner cartridge insertion hole with a cleaning pad.



(4) Reinstall the above parts following the removal steps in reverse.

CLEANING/TONER RECYCLE UNIT

[1] Removing and Reinstalling the Cleaning Blade

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

Caution1: Be sure to replace the following parts at the same time:
- Cleaning blade
- Toner guide roller (TGR)

Caution2: Do not touch the edges of the cleaning blade with bare hands.

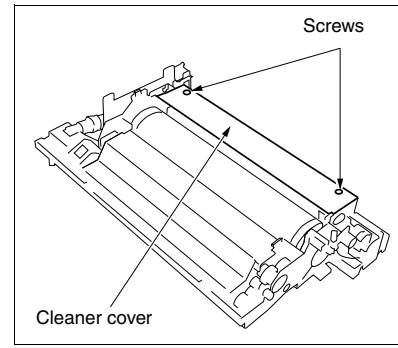
Caution3: When reinstalling the cleaning blade when the humidity is high (80% or more), apply setting powder to the entire surface of the drum and cleaning blade regardless of whether the drum and cleaning blade are new or old.

Caution4: When you have applied setting powder to the drum, perform the following before installing the drum unit on the main body:

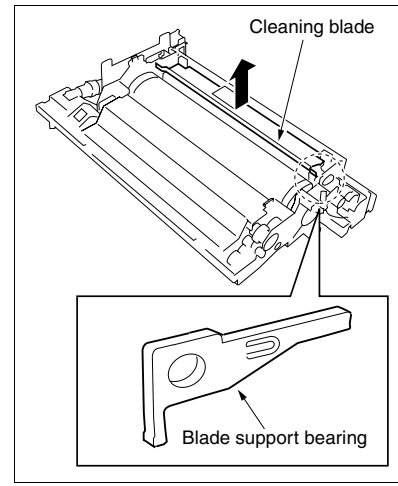
1) To ensure accurate toner concentration, wipe scattered setting powder off the γ sensor and Dmax/JAM sensor on the toner control sensor board with a rag moistened with alcohol.
2) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).

a. Procedure

(1) Remove the drum unit. (See "DRUM UNIT.")
(2) Remove the charging corona unit. (See "CHARGING CORONA UNIT.")
(3) Remove the developing unit. (See "DEVELOPING UNIT.")
(4) Remove two screws to remove the cleaner cover.



(5) Remove the blade support bearing to remove the cleaning blade.



(6) Reinstall the above parts following the removal steps in reverse.

Caution: After replacing the cleaning blade, be sure to perform Blade Setting Mode Adjustment in the 36 mode. (To prevent the blade from peeling.)

[2] Removing and Reinstalling the Toner Guide Roller (TGR)

⚠**Caution:**
Be sure the power cord has been unplugged from the wall outlet.

Caution1: Be sure to replace the following parts at the same time:
- Cleaning blade
- Toner guide roller

Caution2: Do not touch the edges of the cleaning blade with bare hands.

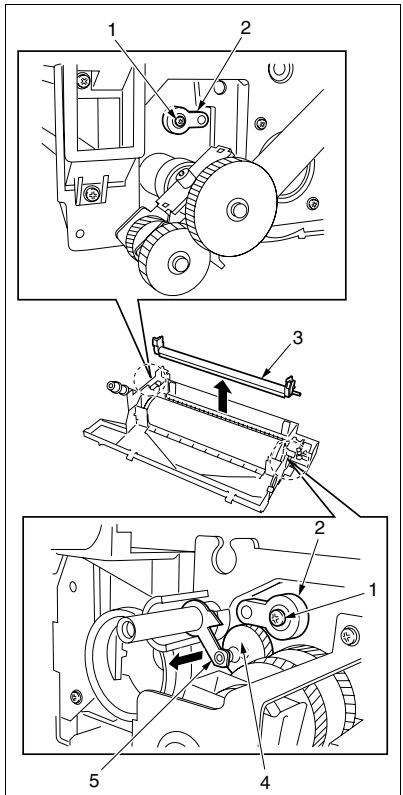
Caution3: When reinstalling the cleaning blade when the humidity is high (80% or more), apply setting powder to the entire surface of the drum and cleaning blade regardless of whether the parts are new or old.

Caution4: When reinstalling the toner guide roller, apply setting powder to the toner guide roller evenly. Apply with the toner guide roller removed from the drum unit.

Caution5: Do not touch the toner guide roller brush with bare hands. Also, do not directly contact the rollers to any object.

a. Procedure

(1) Remove the drum unit. (See "DRUM UNIT.")
(2) Remove the charging corona unit. (See "CHARGING CORONA UNIT.")
(3) Remove the cleaning blade.
(4) Release the power supply pin in contact with the toner guide roller shaft.
(5) Remove the cleaner idle gear.
(6) Remove the screws securing the front and rear positioning parts.
(7) Remove the toner guide roller.



1. Screw
2. Positioning part
3. Toner guide roller
4. Cleaner idle gear
5. Power supply pin

(8) Reinstall the above parts following the removal steps in reverse.

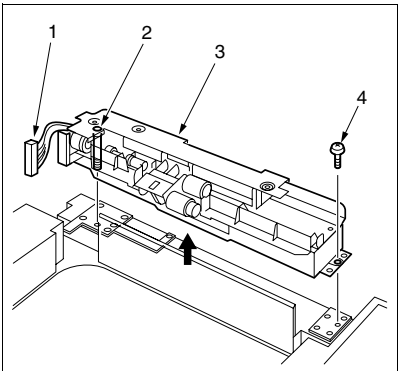
PAPER FEED UNITS OF TRAYS 1 AND 2

[1] Removing and Reinstalling the Paper Feed Unit

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out paper feed tray 1 or 2.
(2) Loosen the securing shaft screw, and remove one screw.
(3) Disconnect the relay connector (CN814, 834) and remove the paper feed unit by lifting.



1. Relay connector (CN814),834
2. Securing shaft screw
3. Paper feed unit
4. Screw

(4) Reinstall the above parts following the removal steps in reverse.

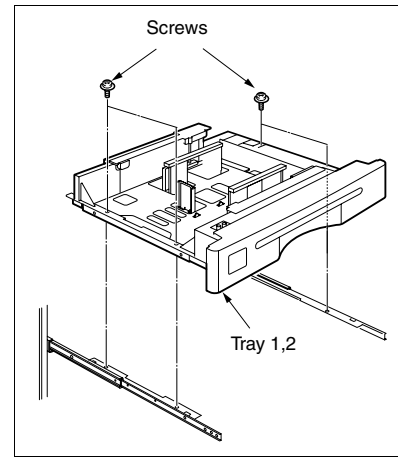
[2] Removing and Reinstalling the Paper Feed Trays 1 and 2

⚠Warning:
When removing the tray, stand in a proper position so that you do not hurt your back and waist. If the tray contains paper, remove all paper before removing the tray.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out paper feed tray 1 or 2.
(2) Remove the paper feed unit.
(3) Remove four screws and remove tray 1 or 2 by lifting.

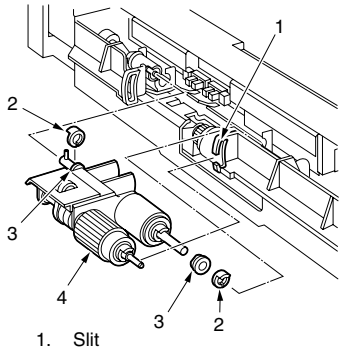


(4) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Paper Feed Roller and Feed Roller Rubber

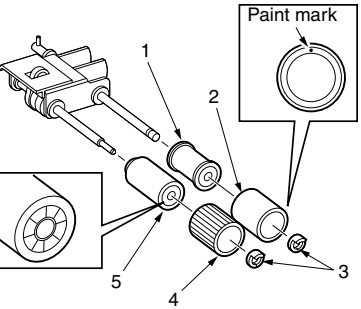
a. Procedure

(1) Remove the paper feed unit.
(2) Remove the two stop rings and slide the two bearings outward.
(3) Release the feed roller axis from the holder slit to detach the paper feed roller unit.



1. Slit
2. Stop ring
3. Bearing
4. Paper feed roller unit

(4) Remove the two stop rings from the paper feed roller unit to detach the paper feed roller and feed roller.
(5) Remove the rubber from each roller.



1. Paper feed roller
2. Paper feed roller rubber
3. Stop rings
4. Feed roller rubber
5. Feed roller

(6) Reinstall the above parts following the removal steps in reverse.

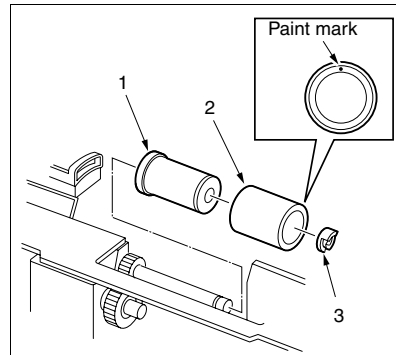
Caution1: When reinstalling the rollers, pay attention to their orientation.

Caution2: Check that no grease or the like remains on each roller.

[4] Removing and Reinstalling the Double Feed Prevention Roller Rubber

a. Procedure

(1) Remove the paper feed unit.
(2) Remove the paper feed roller unit.
(3) Remove the stop ring to detach the double feed prevention roller.
(4) Remove the double feed prevention roller rubber from the roller.



1. Double feed prevention roller
2. Double feed prevention roller rubber
3. Stop ring

(5) Reinstall the above parts following the removal steps in reverse.

Caution1: When reinstalling the double feed prevention roller, pay attention to their orientation.

Caution2: Check that no grease or the like remains on the double feed prevention roller.

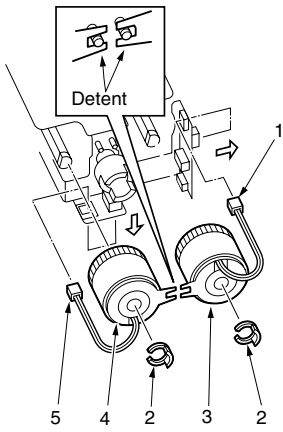
[5] Replacing the Pre-registration and Feed Clutches (MCs)

a. Procedure

(1) Remove the paper feed unit.

(2) Remove the four connectors (CN810, 811, 830, 831).

(3) Remove the stop ring to detach the pre-registration MC/1/2 (MC4/6) and feed MC/1/2 (MC3/5).



1. Connector (CN810,830)
2. Stop ring
3. Feed MC/1/2 (MC3/5)
4. Pre-registration MC/1/2 (MC4/6)
5. Connector (CN811,831)

(4) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling each MC, fit the detent in the slit in the MC.

[6] Replacing the Wires

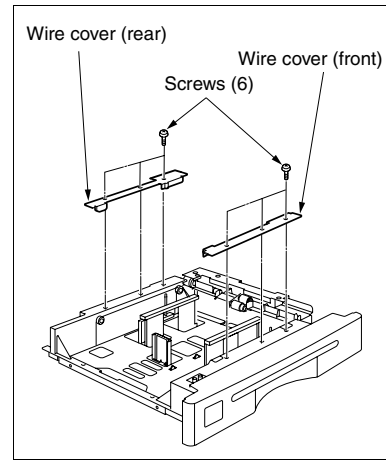
Caution1: After replacing or reinstalling the wires, manually rotate the up/down drive shaft to check that the tray moves up and down smoothly.

Caution2: Be sure to install the wires so that they do not cross or ride over each other.

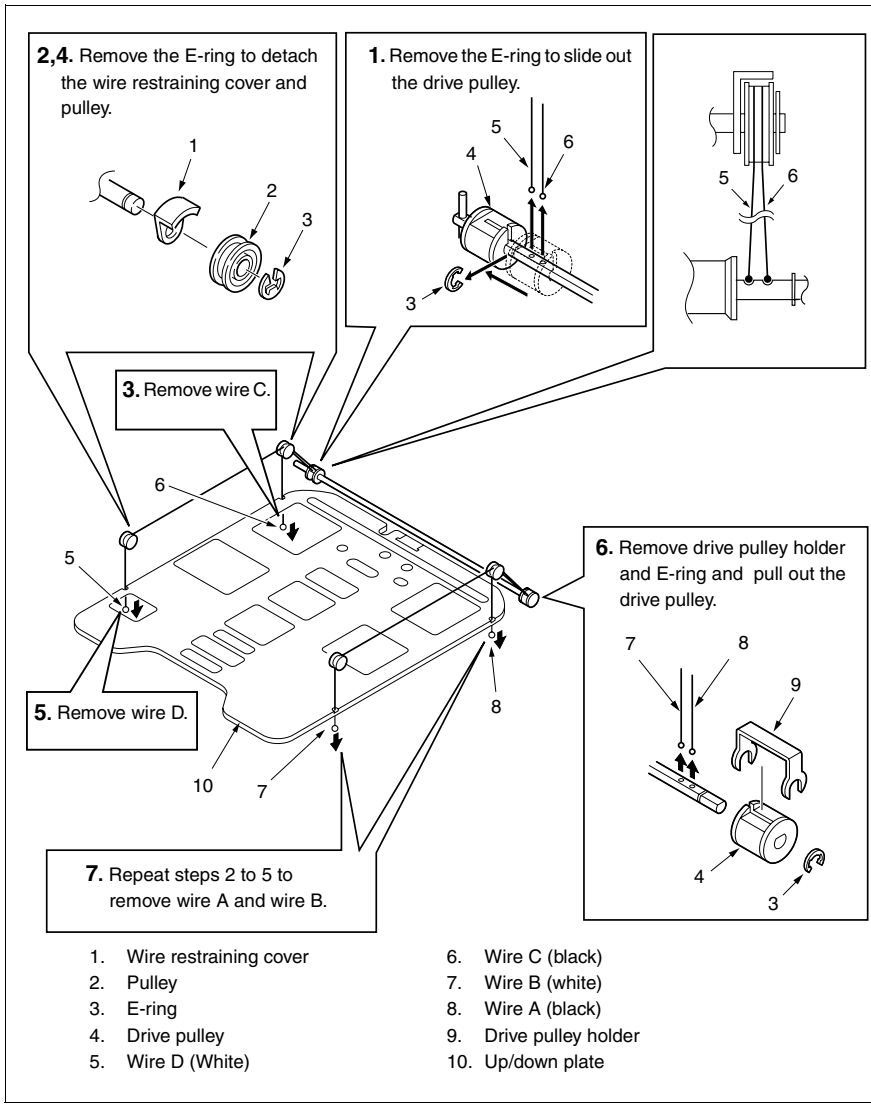
<Removing Wires>

(1) Remove the paper feed unit.

(2) Remove three screws to remove the wire cover (front) and wire cover (rear).



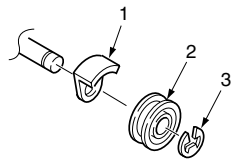
(3) Remove the front and rear wires according to steps 1 to 7 below.



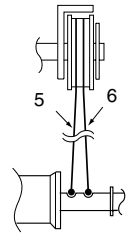
1. Wire restraining cover
2. Pulley
3. E-ring
4. Drive pulley
5. Wire D (White)
6. Wire C (black)
7. Wire B (white)
8. Wire A (black)
9. Drive pulley holder
10. Up/down plate

<Installing Wires>

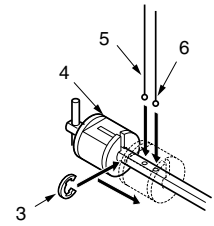
2. Install the pulley, pass wire D through the pulley, and install the wire restraining cover and E-ring.



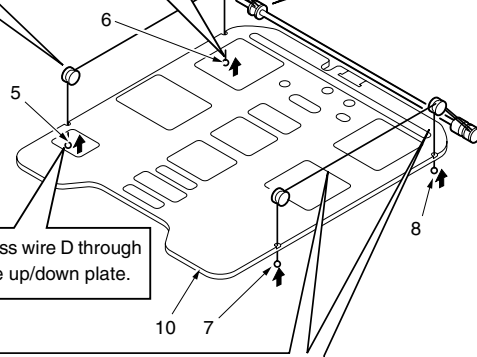
4. Install the pulley, pass wires C and D, and install the wire restraining cover and retaining ring. Wire D must be inside. Wires must not cross.



5. Install the wires C and D from inside the drive shaft hole, push in the drive pulley, and secure with E-ring.

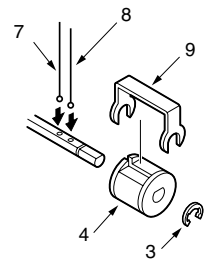


3. Pass wire C through the up/down plate.



1. Pass wire D through the up/down plate.

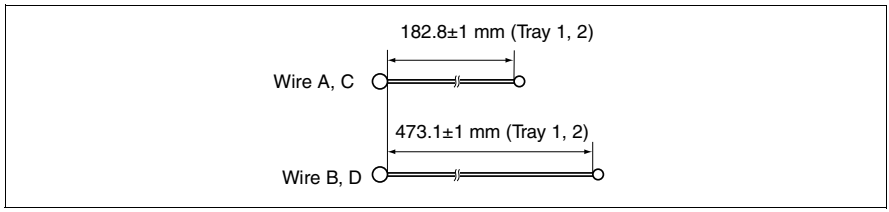
7. Install the wires A and B from inside the drive shaft hole, push in the drive pulley, and secure with E-ring. Next, install the drive pulley holder.



6. Repeat steps 1 to 4 to install wire A and wire B.

1. Wire restraining cover
2. Pulley
3. E-ring
4. Drive pulley
5. Wire D (White)
6. Wire C (black)
7. Wire B (white)
8. Wire A (black)
9. Drive pulley holder
10. Up/down plate

<Wire Lengths>



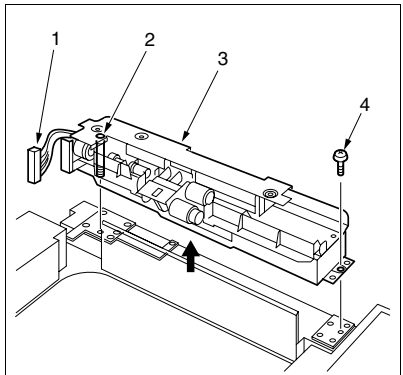
PAPER FEED UNIT OF TRAY 3

[1] Removing and Reinstalling the Paper Feed Unit

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out paper feed tray 3.
(2) Loosen the securing shaft screw, and remove one screw.
(3) Disconnect the relay connector (CN854) and remove the paper feed unit by lifting.



1. Relay connector (CN854)
2. Securing shaft screw
3. Paper feed unit
4. Screw

(4) Reinstall the above parts following the removal steps in reverse.

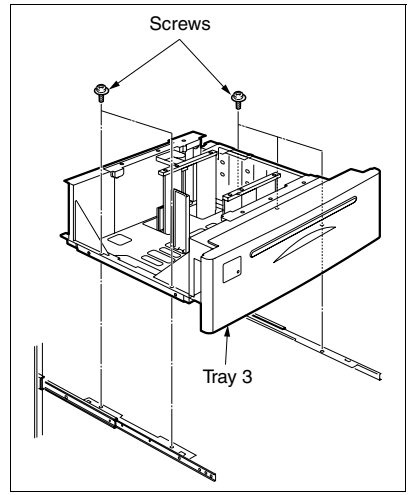
[2] Removing and Reinstalling Paper Feed Tray 3

⚠Warning:
When removing the tray, stand in a proper position so that you do not hurt your back and waist. If the tray contains paper, remove all paper before removing the tray.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out paper feed tray 3.
(2) Remove the paper feed unit.
(3) Remove four screws and remove tray 3 by lifting.

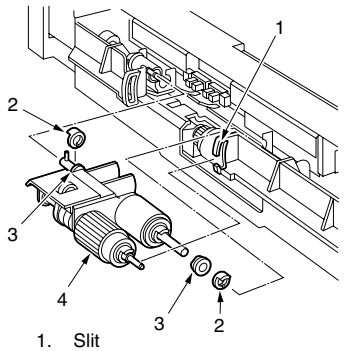


(4) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Paper Feed Roller and Feed Roller Rubber

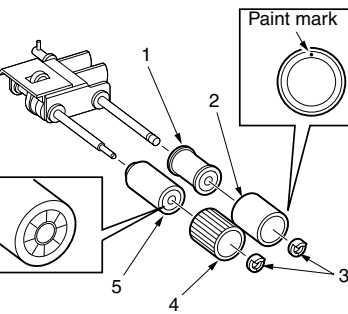
a. Procedure

(1) Remove the paper feed unit.
(2) Remove two stop rings and slide the two bearings outward.
(3) Release the feed roller axis from the holder slit to detach the paper feed roller unit.



1. Slit
2. Stop ring
3. Bearing
4. Paper feed roller unit

(4) Remove two stop rings from the paper feed roller unit to detach the paper feed roller and feed roller.
(5) Remove the rubber from each roller.



1. Paper feed roller
2. Paper feed roller rubber
3. Stop rings
4. Feed roller rubber
5. Feed roller

(6) Reinstall the above parts following the removal steps in reverse.

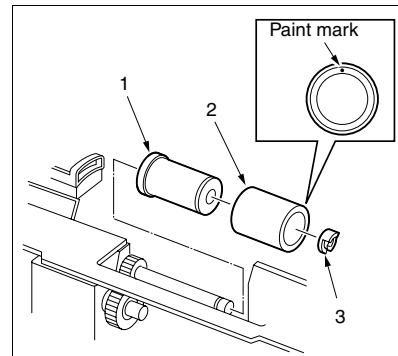
Caution1: When reinstalling the rollers, pay attention to their orientation.

Caution2: Check that no grease or the like remains on each roller.

[4] Removing and Reinstalling the Double Feed Prevention Roller Rubber

a. Procedure

(1) Remove the paper feed unit.
(2) Remove the paper feed roller unit.
(3) Remove the stop ring to detach the double feed prevention roller.
(4) Remove the double feed prevention roller rubber from the roller.



1. Double feed prevention roller
2. Double feed prevention roller rubber
3. Stop ring

(5) Reinstall the above parts following the removal steps in reverse.

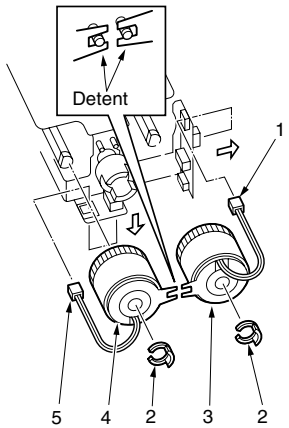
Caution1: When reinstalling the double feed prevention roller, pay attention to their orientation.

Caution2: Check that no grease or the like remains on the double feed prevention roller.

[5] Replacing the Pre-registration and Feed Clutches (MCs)

a. Procedure

(1) Remove the paper feed unit.
(2) Remove two connectors (CN850, 851).
(3) Remove two stop rings to detach the pre-registration MC/3 (MC8) and feed MC/3 (MC7).



1. Connector (CN850)
2. Stop ring
3. Feed MC/3 (MC7)
4. Pre-registration MC/3 (MC8)
5. Connector (CN851)

(4) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling each MC, fit the detent in the slit in the MC.

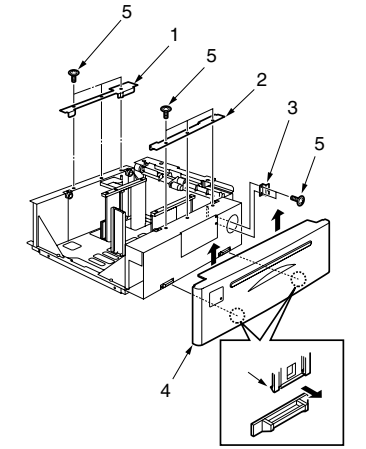
[6] Replacing the Wires

Caution1: After replacing or reinstalling the wires, manually rotate the up/down drive shaft to check that the tray moves up and down smoothly.

Caution2: Be sure to install the wires so that they do not cross or ride over each other.

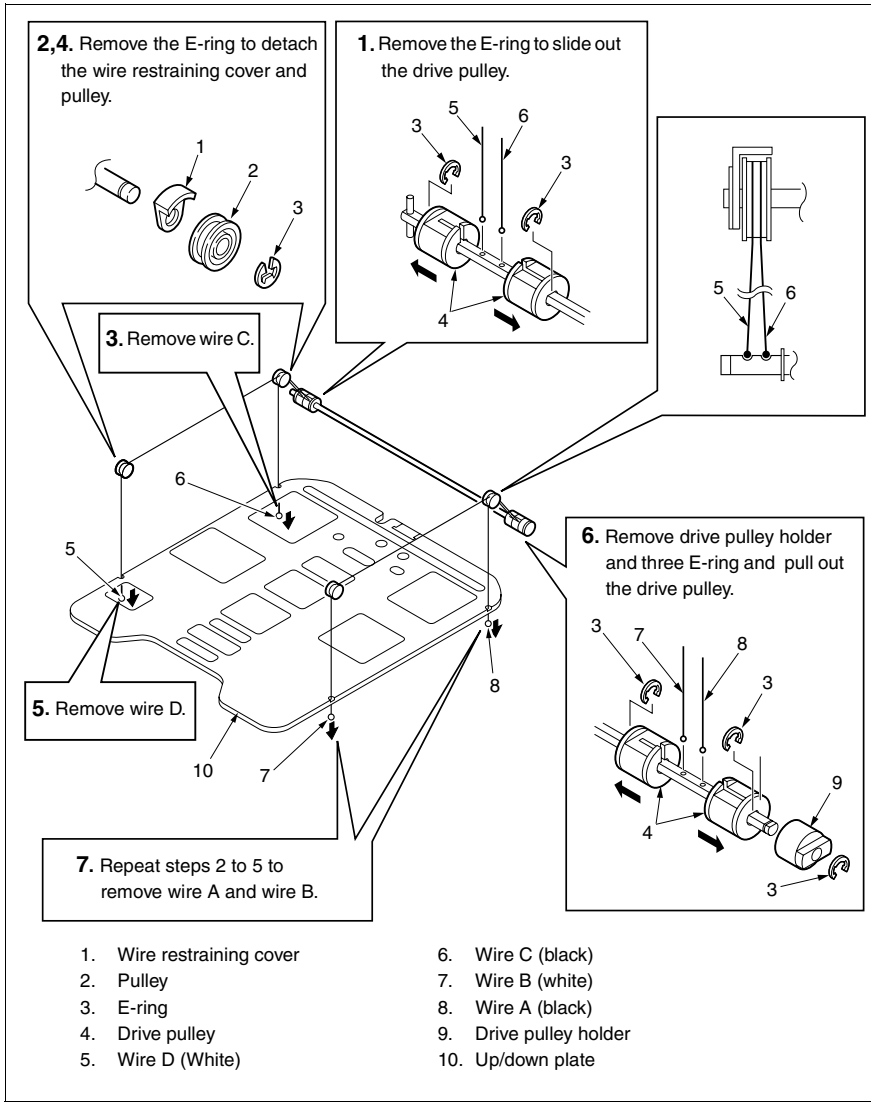
<Removing Wires>

(1) Remove the paper feed unit.
(2) Remove two claws to remove the tray front cover.
(3) Remove two screws to remover shaft supporting plate.
(4) Remove three screws to remove the wire cover(front) and wire cover (rear).



1. Wire cover (rear)
2. Wire cover (front)
3. Shaft supporting plate
4. Tray cover (front)
5. Screws

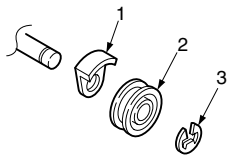
(5) Remove the front and rear wires according to steps 1 to 7 below.


2,4. Remove the E-ring to detach the wire restraining cover and pulley.
1. Remove the E-ring to slide out the drive pulley.
3. Remove wire C.
5. Remove wire D.
6. Remove drive pulley holder and three E-ring and pull out the drive pulley.
7. Repeat steps 2 to 5 to remove wire A and wire B.

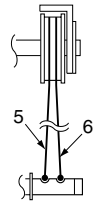
1. Wire restraining cover
2. Pulley
3. E-ring
4. Drive pulley
5. Wire D (White)
6. Wire C (black)
7. Wire B (white)
8. Wire A (black)
9. Drive pulley holder
10. Up/down plate

<Installing Wires>

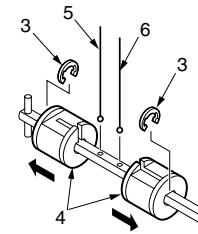
2. Install the pulley, pass wire D through the pulley, and install the wire restraining cover and E-ring.



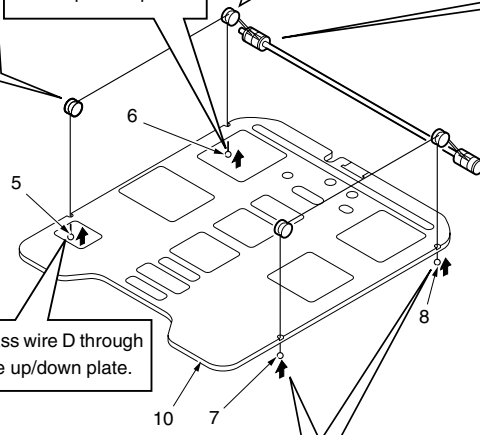
4. Install the pulley, pass wires C and D, and install the wire restraining cover and retaining ring. Wire D must be inside. Wires must not cross.



5. Install the wires C and D from inside the drive shaft hole, push in the drive pulley, and secure with E-ring.

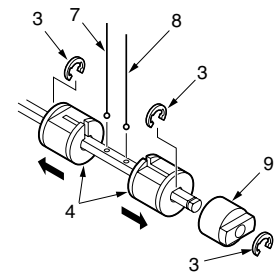


3. Pass wire C through the up/down plate.



1. Pass wire D through the up/down plate.

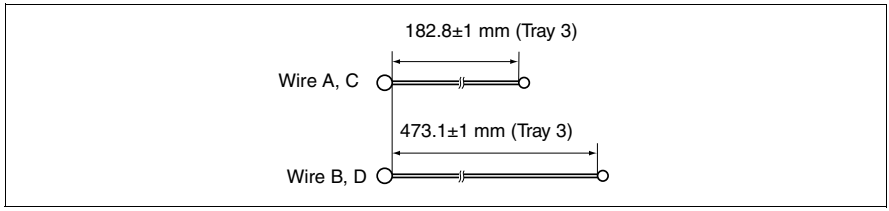
7. Install the wires A and B from inside the drive shaft hole, push in the drive pulley, and secure with E-ring. Next, install the drive pulley holder.



6. Repeat steps 1 to 4 to install wire A and wire B.

1. Wire restraining cover
2. Pulley
3. E-ring
4. Drive pulley
5. Wire D (White)
6. Wire C (black)
7. Wire B (white)
8. Wire A (black)
9. Drive pulley holder
10. Up/down plate

<Wire Lengths>



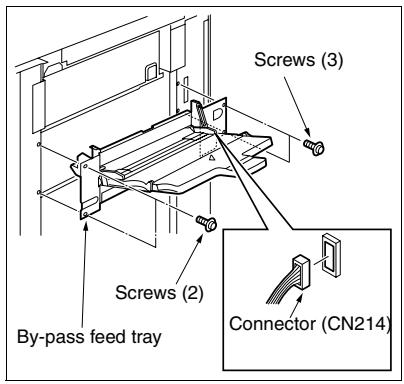
BY-PASS FEED TRAY

[1] Removing and Reinstalling the by-pass Feed Tray

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the developing suction filter cover and right side cover (upper). (See "EXTERNAL SECTION.")
(2) Remove connector (CN214).
(3) Remove four screws to remove the by-pass feed tray.

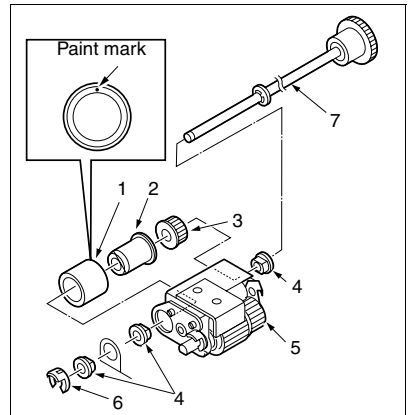


(4) Reinstall the above parts following the removal steps in reverse.

[2] Replacing the Paper Feed Roller/ Paper Feed Roller Rubber

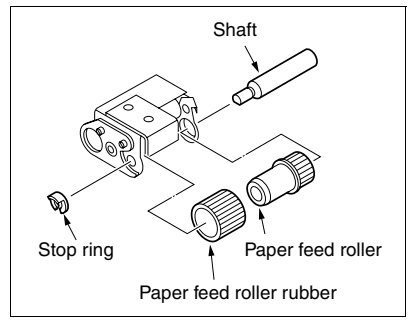
a. Procedure

(1) Remove the by-pass feed tray.
(2) Remove the stop ring and bearing and pull out the shaft from the paper feed roller.
(3) Remove the two bearings and one gear and remove the paper feed roller rubber from the paper feed roller.



1. Paper feed roller rubber
2. Paper feed roller
3. Gear
4. Bearing
5. Paper feed roller assembly
6. Stop ring
7. Shaft

(4) Remove the stop ring from the paper feed roller assembly to pull out the shaft and remove the paper feed roller rubber from the paper feed roller.



(5) Reinstall the above parts following the removal steps in reverse.

Caution1: Check that the orientation of the roller is correct when installing.

Caution2: Check that no grease or the like remains on the roller.

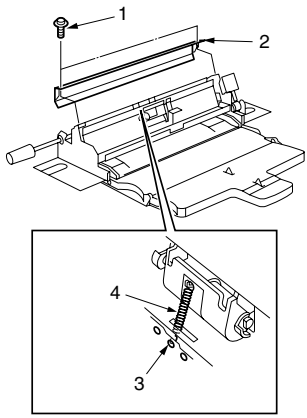
[3] Replacing the Double Feed Prevention Roller Rubber

a. Procedure

(1) Remove the by-pass feed tray and place the tray upside down.

(2) Remove two screws to remove the bottom plate assembly.

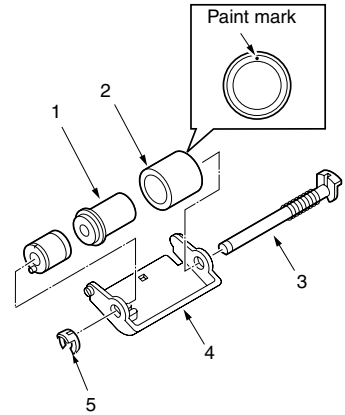
(3) Remove the spring.



1. Screws (2)
2. Bottom plate assembly
3. Spring hole
4. Spring

(4) Remove the double feed prevention roller assembly from the by-pass feed tray unit.

(5) Remove the stop ring to pull out the shaft and remove the double feed prevention roller rubber from the double feed prevention roller.



1. Double feed prevention roller
2. Double feed prevention roller rubber
3. Shaft
4. Double feed prevention roller assembly
5. Stop ring

(6) Reinstall the above parts following the removal steps in reverse.

Caution1: Check that the orientation of the double feed prevention roller is correct when installing.

Caution2: Check that no grease or the like remains on the double feed prevention roller.

Caution3: There are three spring holes. Insert the spring in the middle hole.

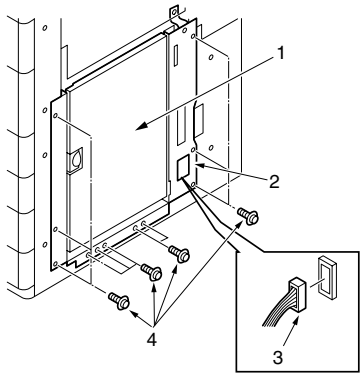
VERTICAL CONVEYANCE SECTION

[1] Removing and Reinstalling the Vertical Conveyance Section

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove all right side covers. (See "EXTERNAL SECTION.")
(2) Disconnect the connector (CN880).
(3) Remove eleven screws to remove the vertical conveyance section.



1. Vertical conveyance door
2. Vertical conveyance section
3. Connector (CN880)
4. Screws (11)

(4) Reinstall the above parts following the removal steps in reverse.

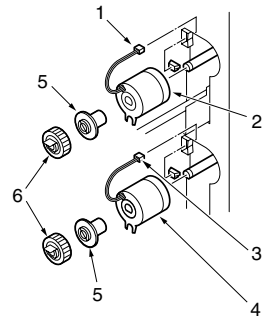
Caution: When installing the vertical conveyance section, be sure to secure the screws with the vertical conveyance door closed.

[2] Removing and Reinstalling the Vertical Conveyance MC (MC11, MC12)

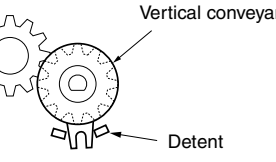
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the vertical conveyance section.
(2) Remove the gear lock to remove the two gears and two spacer axes.
(3) Disconnect the two connectors (CN881, CN882) to remove the wiring harness from the harness guide.
(4) Remove each MC.



1. Connector (CN881)
2. Vertical conveyance MC/1(MC11)
3. Connector (CN882)
4. Vertical conveyance MC/2(MC12)
5. Spacer axis
6. Gear



(5) Reinstall the above parts following the removal steps in reverse.

Caution: When installing, be sure the detent of the clutch is at the position shown above.

ADU UNIT

[1] Drawing out and Reinstalling the ADU Stand

⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

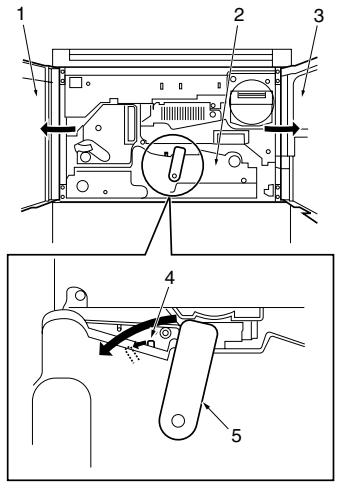
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Open the front right and left doors.

(2) With the solenoid release lever on the ADU stand pushed to the left, turn down the ADU drawing lever to the left.

(3) Grip the ADU stand drawing lever and draw out the ADU stand.



1. Left door
2. ADU stand
3. Right door
4. Solenoid release lever
5. ADU stand drawing lever

(4) To reinstall the ADU stand, push in the ADU stand and then turn the ADU stand drawing lever upright.

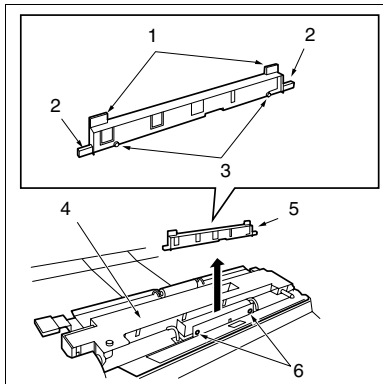
[2] Cleaning the Paper Dust Removing Brush

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

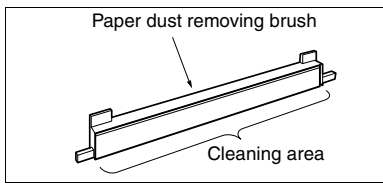
(1) Draw out the ADU stand from the main body.

(2) Release the left and right lock levers, lift the brush handles by the handles to remove the paper dust removing brush.



1. Brush handles
2. Lock lever
3. Projections
4. Second paper feed unit
5. Paper dust removin brush
6. Positioning holes

(3) Using a blower brush, clean the paper dust removing brush.



(4) Reinstall the above parts following the removal steps in reverse.

Caution: When installing, align the projection on the paper dust removing brush with the positioning hole on the second paper feed unit.

[3] Cleaning the Paper Mis-centering PS (PS70)/Leading Edge PS (PS43)

⚠Warning:

The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

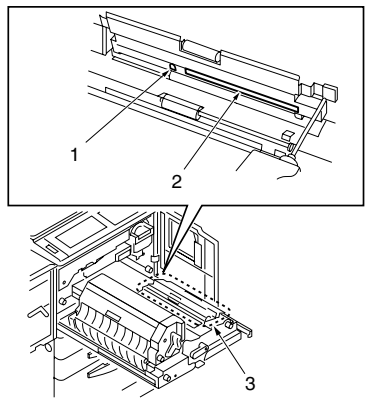
⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.

(2) Open the pre-transfer jam handler. Clean the sensor of the paper mis-centering PS (PS70) and leading edge PS (PS43) at the rear of the pre-transfer jam handler using a drum cleaner or cleaning pad.



1. Leading edge PS (PS43)
2. Paper mis-centering PS (PS70)
3. Pre-transfer jam handler

(3) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Registration MC (MC1)

⚠Warning:

The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

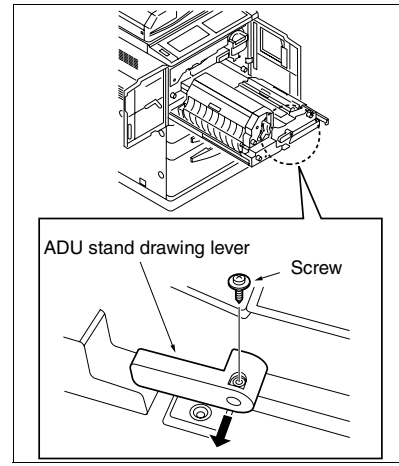
⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

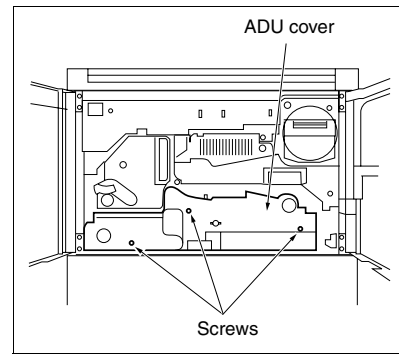
a. Procedure

(1) Draw out the ADU stand from the main body.

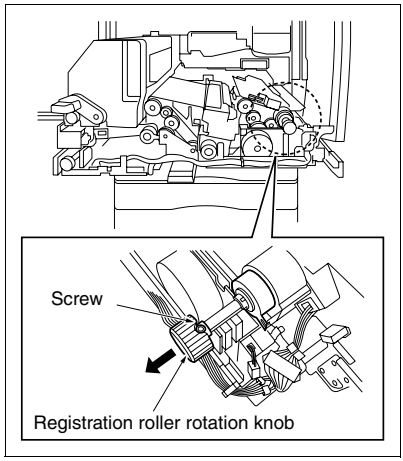
(2) Remove one screw to remove the ADU stand drawing lever.



(3) Remove three screws to remove the ADU cover.



(4) Remove one screw and remove the registration roller rotation knob.

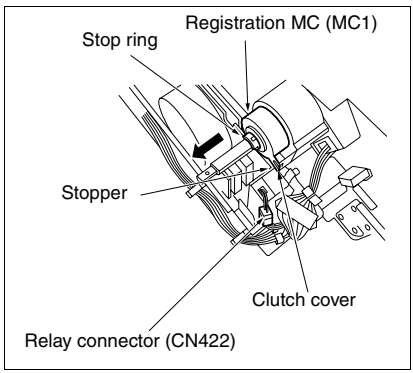


(5) Disconnect the relay connector (CN422).

Caution: A relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the CN422 connector.

(6) Remove the stop ring to detach the registration MC (MC1).

Caution: When reinstalling, be sure the detent of the clutch is in the clutch cover groove.



(7) Reinstall the above parts following the removal steps in reverse.

[5] Removing and Reinstalling the Second Paper Feed Unit

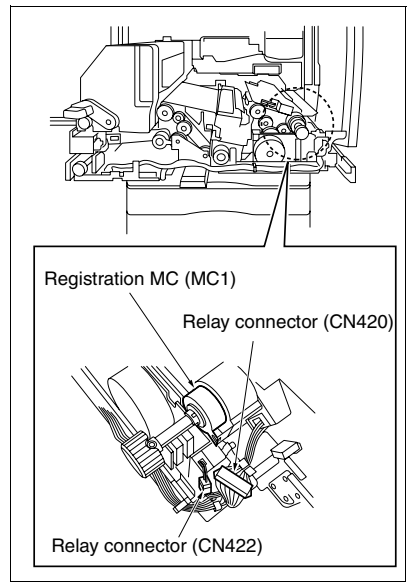
⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

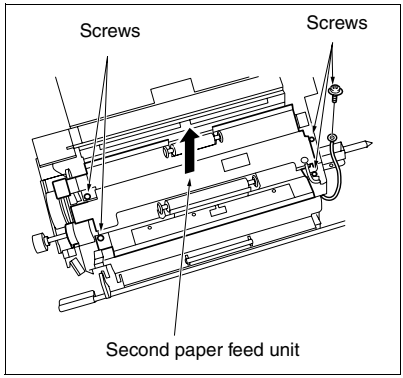
a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Detach the ADU cover.
(3) Disconnect the two relay connectors (CN420, 422), and disconnect the relay connector from the wiring harness.

Caution: Each relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the connector.



(4) Remove five screws to remove the second paper feed unit.



(5) Reinstall the above parts following the removal steps in reverse.

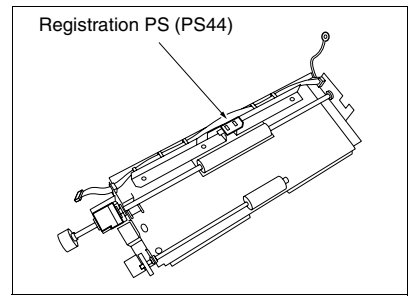
[6] Cleaning the Registration PS (PS44)

⚠ Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠ Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Detach the ADU cover.
(3) Remove the second paper feed unit
(4) Turn the second paper feed unit upside down and clean the registration PS (PS44) with a blower brush.



(5) Reinstall the above parts following the removal steps in reverse.

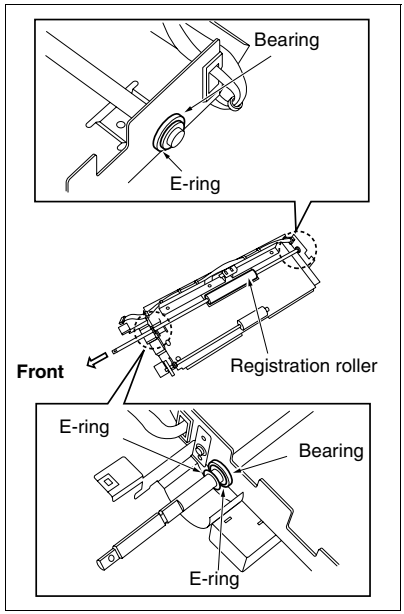
[7] Removing and Reinstalling the Registration Roller

⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

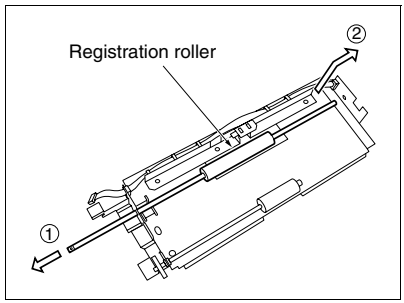
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Detach the ADU cover.
(3) Remove the second paper feed unit
(4) Remove the registration MC (MC1).
(5) Turn the second paper feed unit upside down and remove the E-ring on the front of the registration roller.
(6) Remove the two E-rings (one at the left and the other at the right) and one bearing from the registration roller.



(7) Slide the registration roller to the front, then remove it by lifting the rear end.



(8) Reinstall the above parts following the removal steps in reverse.

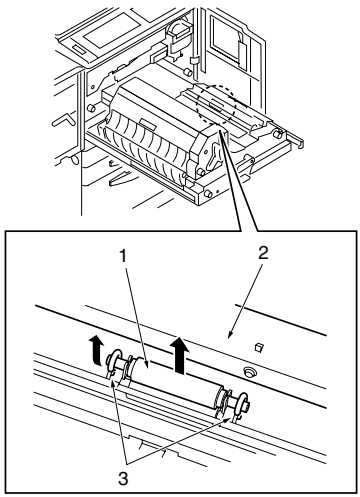
[8] Removing and Reinstalling the Pre-transfer Roller

⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

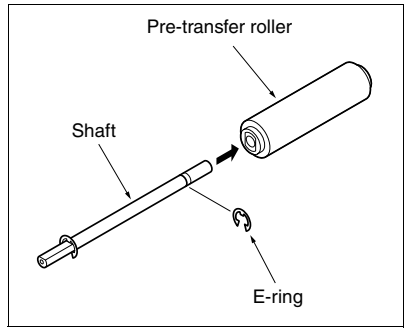
(1) Draw out the ADU stand from the main body.
(2) Remove the two springs.
(3) Open the pre-transfer jam handler to remove the pre-transfer roller assembly.



1. Pre-transfer roller assembly
2. Pre-transfer jam handler
3. Springs

(4) Remove the E-ring to remove the pre-transfer roller from the shaft.

Caution: When reinstalling, pay attention to the position of the E-ring.



(5) Reinstall the above parts following the removal steps in reverse.

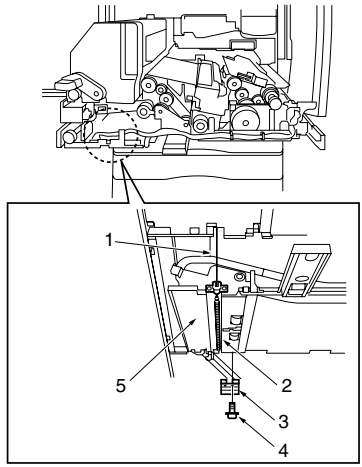
[9] Cleaning the ADU Paper Reverse PS (PS45)/Reverse/Exit PS (PS46)

⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the ADU cover.
(4) Remove one screw to remove the ground plate.
(5) Remove the open/close spring from the paper exit side open/close wire.

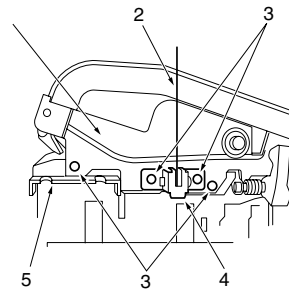


1. Open/close wire
2. Open/close spring
3. Ground plate
4. Screw
5. ADU reverse guide assembly

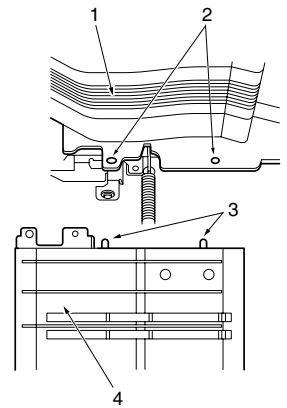
(6) Remove two screws to remove the open/close wire assembly.

(7) Remove two screws to remove the ADU reverse guide assembly.

Caution: When reinstalling, align the projection on the rear of the ADU reverse guide assembly with the hole on the ADU bottom plate assembly.

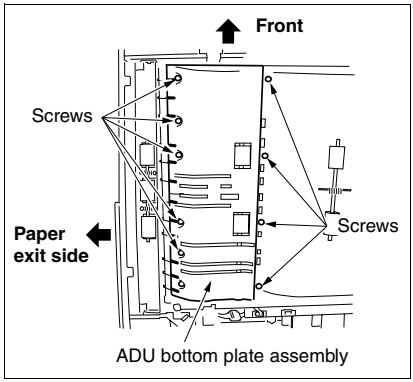


1. ADU bottom plate assembly
2. Open/close wire
3. Screws
4. Open/close wire assembly
5. ADU reverse guide assembly



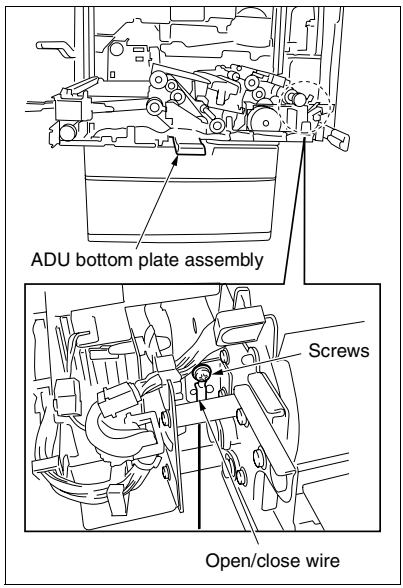
1. ADU bottom plate assembly
2. Holes
3. Projections
4. ADU reverse guide assembly

(8) Remove the nine screws illustrated from the bottom of the ADU stand.

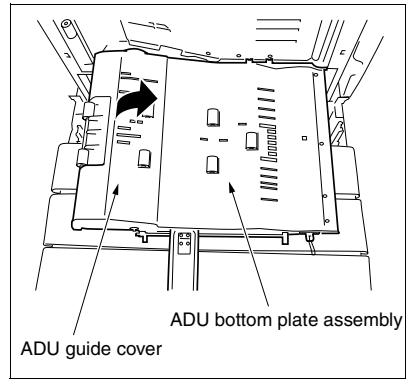


(9) Remove one screw while holding the ADU bottom plate assembly to remove the paper feed side open/close wire.

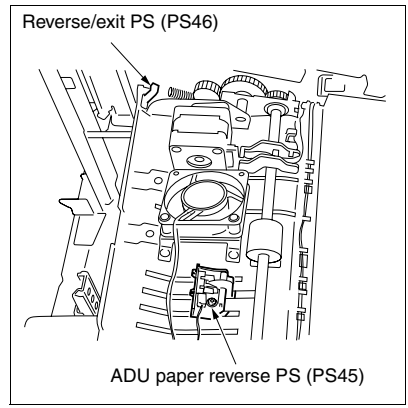
Caution: Be sure to hold ADU bottom plate assembly when removing the screws because the ADU bottom plate assembly becomes free when the paper feed side open/close wire is removed.



(10) Lower the ADU bottom plate assembly straight down and remove the ADU guide cover.



(11) Clean the ADU paper reverse PS (PS45) and reverse/exit PS (PS46) with a blower brush.



(12) Reinstall the above parts following the removal steps in reverse.

[10] Removing and Reinstalling the ADU Reverse Roller

⚠Warning:

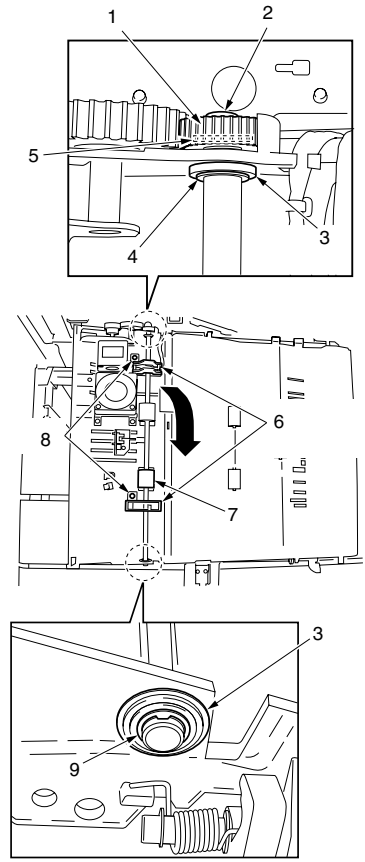
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Caution:

Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the ADU cover.
(4) Remove the ADU guide cover.
(5) Remove the screw to remove two wiring harnesses.
(6) Remove E-ring (1) to remove the paper eject reverse gear (1) and pin.
(7) Remove E-ring (2) to remove the rear side bearing.
(8) Remove E-ring (3) to remove the front side bearing.
(9) Slide the ADU reverse roller to the upper side and then to the lower side to slide it out.



1. Paper exit reverse gear (1)
2. E-ring (1)
3. Bearing
4. E-ring (2)
5. Pin
6. Wiring harnesses
7. ADU reverse roller
8. Screws
9. E-ring (3)

(10) Reinstall the above parts following the removal steps in reverse.

[11] Removing and Reinstalling the ADU Stand

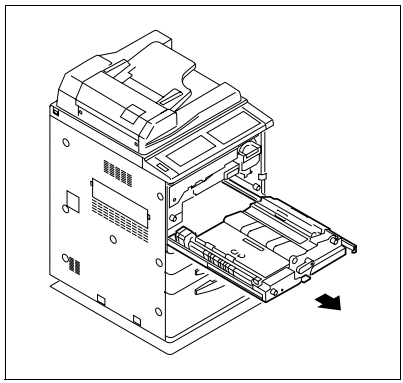
⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Warning:
Removal and reinstallation of the ADU stand involve carrying a heavy load so it should be performed by two persons.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

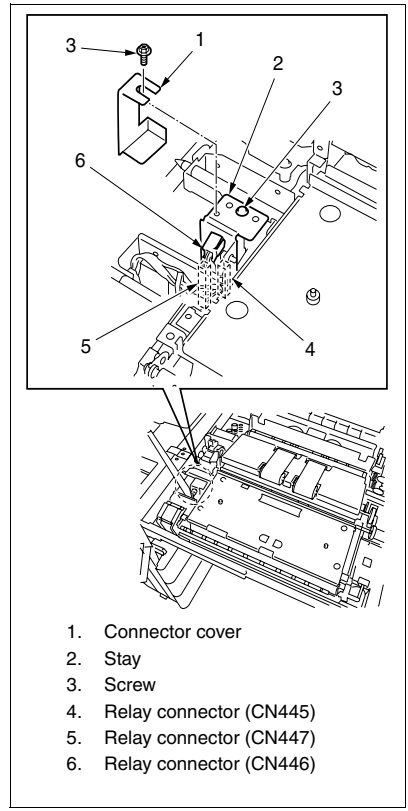
a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the transfer/separation corona unit. (See "CORONA UNIT.")
(4) Remove the second paper feed unit.
(5) Remove the front right door and the front left door. (See "EXTERNAL SECTION.")



(6) Remove one screw to remove the connector cover.
(7) Remove the screw to loosen the stay.
(8) Disconnect the three relay connectors (CN445, 446, 447).

Caution: Disconnect each connector on the ADU stand.

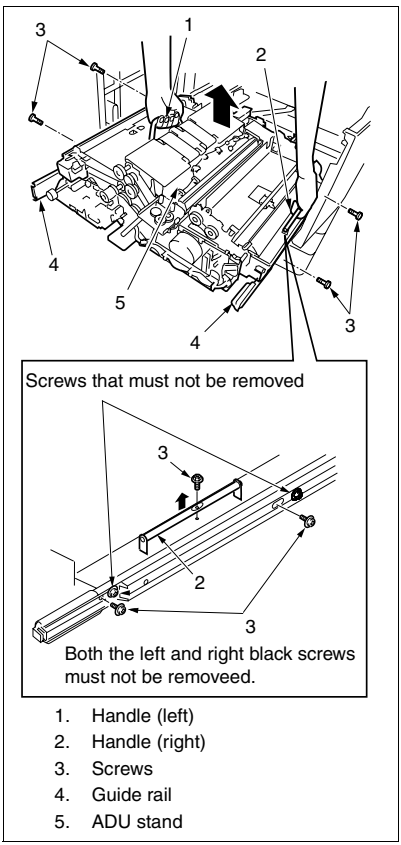


1. Connector cover
2. Stay
3. Screw
4. Relay connector (CN445)
5. Relay connector (CN447)
6. Relay connector (CN446)

(9) Remove one screw to release the lock of the handle(right).
(10) Remove the two screws securing the guide rails on the paper feed side and paper exit side.

Caution: Do not mistake the screws securing the guide rails for screws(black) that must not be removed. (Black screws must not be removed)

(11) To remove the ADU stand, one person holds the handle(right) on the paper-feed side, and the other holds the the handle(left) on the fixing unit. Then, they lift up the ADU stand.



1. Handle (left)
2. Handle (right)
3. Screws
4. Guide rail
5. ADU stand

(12) Reinstall the above parts following the removal steps in reverse.

[12] Removing and Reinstalling the Pre-registration Roller

⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Warning:
Removal and reinstallation of the ADU stand involve carrying a heavy load so it should be performed by two persons.

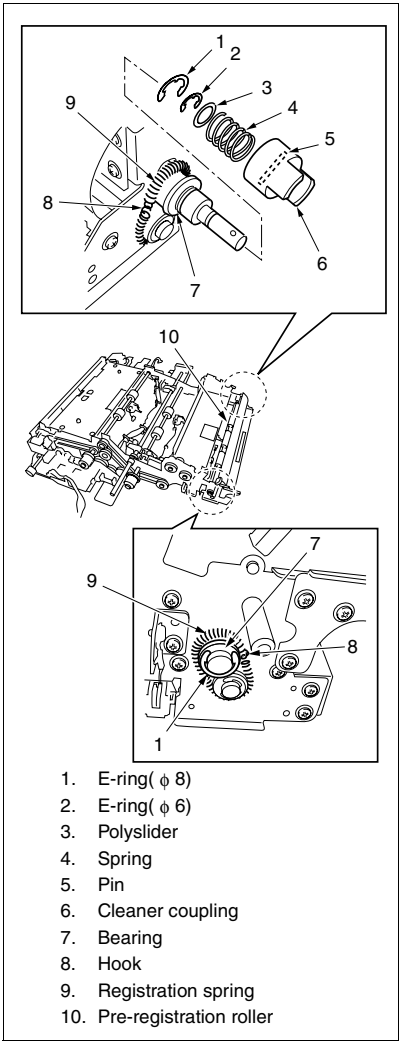
⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Remove the front and rear registration springs.

Caution: When reinstalling, pay attention to the location of the registration spring hook.

(2) Remove the E-ring (ϕ6)
(3) Press the cleaner coupling and pull out the pin.
(4) Remove the spring.
(5) Remove the front and rear E-rings (ϕ8) and remove each bearing.
(6) Slide the ADU pre-registration roller back and forth to remove.



1. E-ring(ϕ 8)
2. E-ring(ϕ 6)
3. Polyslider
4. Spring
5. Pin
6. Cleaner coupling
7. Bearing
8. Hook
9. Registration spring
10. Pre-registration roller

(7) Reinstall the above parts following the removal steps in reverse.

[13] Removing and Reinstalling the ADU Conveyance Roller 3 and 4

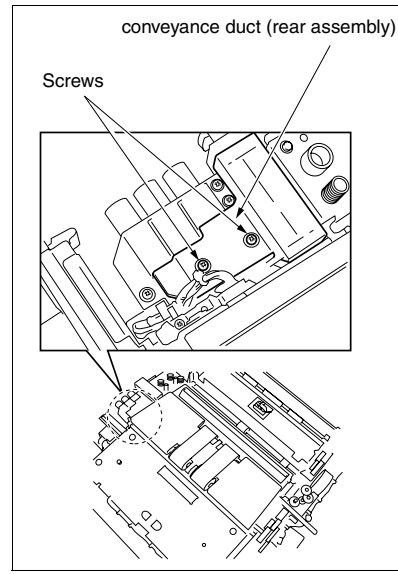
⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Warning:
Removal and reinstallation of the ADU stand involve carrying a heavy load so it should be performed by two persons.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the transfer/separation corona unit. (See "CORONA UNIT SECTION.")
(4) Remove the second paper feed unit.
(5) Remove the ADU stand.
(6) Remove two screws to detach the conveyance duct (rear assembly).

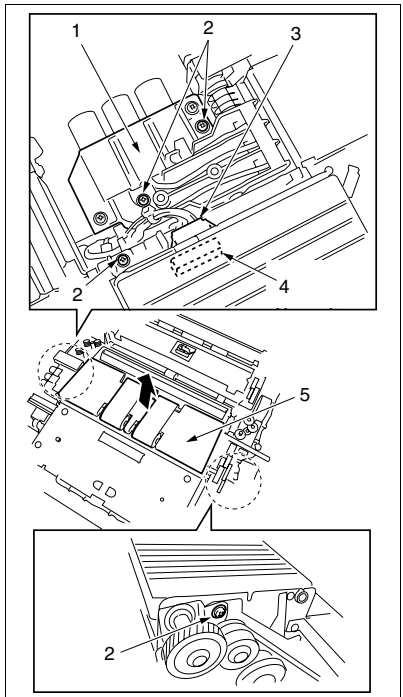


(7) Remove two screws to release the high voltage supply unit (1).

(8) Disconnect the two connectors (CN460, 461).

Caution: Each relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the connector.

(9) Remove two screws to remove the conveyance unit.

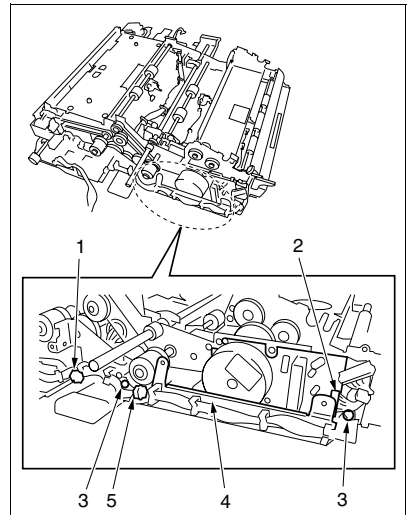


1. High voltage supply unit (1)
2. Screws
3. Relay connector (CN460)
4. Relay connector (CN461)
5. Conveyance unit

(10) Disconnect the three connectors (CN421, 426, 427)

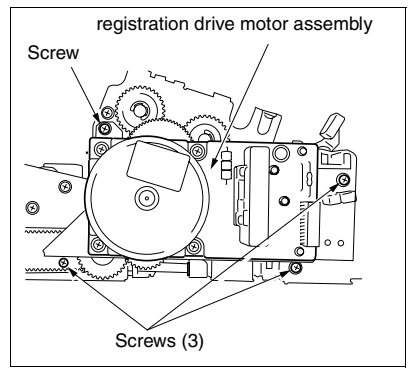
Caution: Each relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the connector.

(11) Remove two screws to remove the harness guide plate (front).

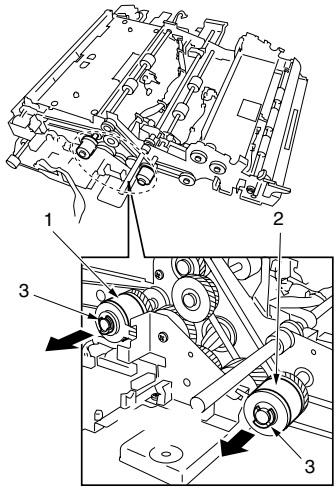


1. Relay connector (CN427)
2. Relay connector (CN421)
3. Screws
4. Harness guide (front)
5. Relay connector (CN426)

(12) Remove four screws to detach the registration drive motor assembly.



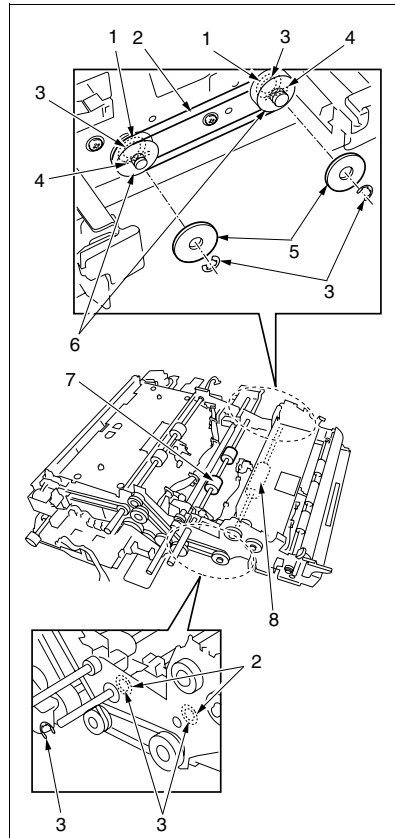
(13) Remove the stop rings to remove the ADU deceleration MC (MC2) and ADU conveyance MC (MC13).



1. ADU conveyance MC (MC13)
2. ADU deceleration MC (MC2)
3. Stop rings

(14) Remove the E-ring at the rear, two belt holding collars, ADU conveyance belt (1), and two ADU conveyance pulleys.
(15) Remove the pin from each roller shaft.
(16) Remove the E-ring and bearing on the inside of the ADU conveyance pulley.
(17) Remove the E-ring on the ADU conveyance roller(3) shaft.

(18) Remove the front E-ring and bearing, and remove the ADU conveyance roller (3) and ADU conveyance roller (4) by sliding them back and forth.



1. Bearing
2. ADU conveyance belt (1)
3. E-ring
4. Pin
5. Belt holding collars
6. ADU conveyance pulley
7. ADU conveyance roller(3)
8. ADU conveyance roller (4)

(19) Reinstall the above parts following the removal steps in reverse.

[14] Removing and Reinstalling the ADU Conveyanece Roller 1 and 2

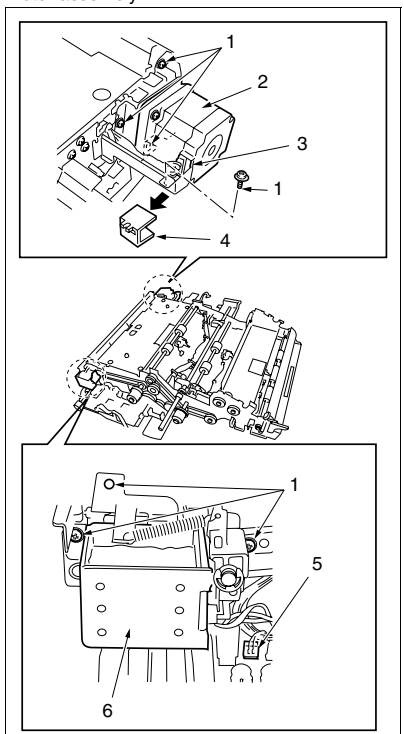
⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Warning:
Removal and reinstallation of the ADU stand involve carrying a heavy load so it should be performed by two persons.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the transfer/separation corona unit. (See "CORONA UNIT.")
(4) Remove the second paper feed unit.
(5) Remove the ADU stand.
(6) Remove the conveyance unit.
(7) Remove the ADU conveyance MC(MC13).
(8) Disconnect the connector (CN407).
(9) Remove three screws to detach the reverse gate solenoid assembly.
(10) Remove one screw to remove the connector cover.
(11) Disconnect the connector (CN415).
(12) Remove three screws to detach the reverse motor assembly.

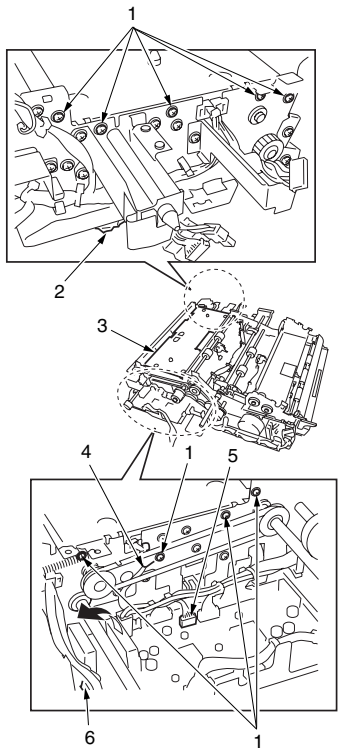


1. Screws
2. Reverse motor assembly
3. Connector (CN415)
4. Connector cover
5. Connector (CN407)
6. Reverse gate solenoid assembly

(13) Disconnect the two connectors (CN403, 404).
(14) Disconnect the connector (CN417).

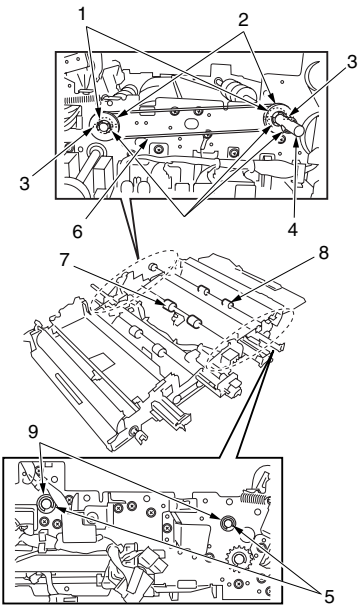
Caution: Each relay connector consists of two male sides and one female side. Be sure to remove only the male side (shown below) of the connector.

(15) Remove one screw to remove the wiring harness for CN404.
(16) Remove the screws (front and rear) and turn over the fixing attachment rail assembly to the paper exit side.



1. Screws
2. Relay connector (CN417)
3. Fixing attachment rail assembly
4. Wiring harnesses
5. Relay connector (CN404)
6. Relay connector (CN403)

(17) Remove the E-ring from ADU conveyance roller (2) shaft.
(18) Remove the front E-ring, two belt holding collars, ADU conveyance belt (2), and two ADU conveyance pulleys.
(19) Remove the pin from the shaft of each roller.
(20) Remove the E-ring and bearing inside the ADU conveyance pulley.
(21) Remove the rear E-ring and bearing, and remove the ADU conveyance roller (1) and ADU conveyance roller (2) by sliding them back and forth.



1. E-ring, bearing
2. Belt holding collars, ADU transport pulleys
3. Pin
4. ADU conveyance roller (2) shaft
5. E-rings
6. ADU conveyance belt (2)
7. ADU conveyance roller (2)
8. ADU conveyance roller (1)
9. Bearing

[15] Removing and Reinstalling the Paper Reverse/Exit Roller

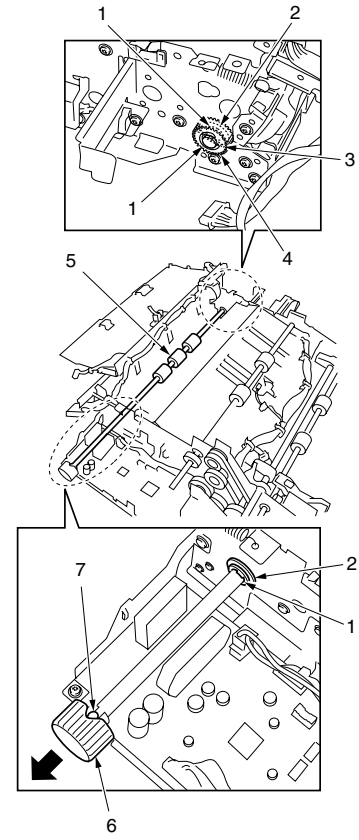
⚠Warning:
The interlock which is turned OFF when the front right or left door opens or closes should never be turned ON forcibly with the ADU stand drawn out.

⚠Warning:
Removal and reinstallation of the ADU stand involve carrying a heavy load so it should be performed by two persons.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand from the main body.
(2) Remove the fixing unit. (See "FIXING UNIT.")
(3) Remove the transfer/separation corona unit. (See "CORONA UNIT.")
(4) Remove the second paper feed unit.
(5) Remove the ADU stand.
(6) Remove the conveyance unit.
(7) Remove the ADU conveyance roller (1).
(8) Remove the screw to remove the paper reverse/exit roller rotation knob.
(9) Remove the front E-ring and remove the bearing.
(10) Remove the rear E-ring to remove the paper exit/reverse gear (1) and pin.
(11) Remove the E-ring and remove the bearing.
(12) Remove the paper reverse/exit roller by sliding it back and forth.



1. E-ring
2. Bearing
3. Pin
4. Paper exit/reverse gear (1)
5. Paper reverse/exit roller
6. Paper reverse/exit roller rotation knob
7. Screw

(13) Reinstall the above parts following the removal steps in reverse.

FIXING UNIT

[1] Removing and Reinstalling the Fixing Unit

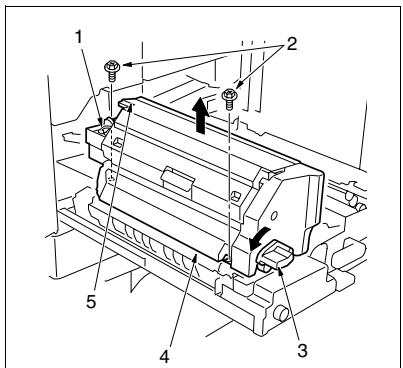
⚠Warning:
Do not touch the fixing unit immediately after turning OFF the main power switch because it is very hot and you may suffer burns. Wait until the fixing unit has cooled down sufficiently before working on it.

⚠Caution:
Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

(1) Draw out the ADU stand. (See "ADU UNIT.")
(2) Turn the pressure release lever counterclockwise to release the pressure.
(3) Remove two screws and remove the fixing unit by lifting.

Caution: Do not hold the connector socket. Remove by holding the pressure release lever and the holding end at the far side.



1. Connector socket
2. Screws (2)
3. Pressure release lever
4. Fixing unit
5. holding end

(4) Reinstall the above parts following the removal steps in reverse.

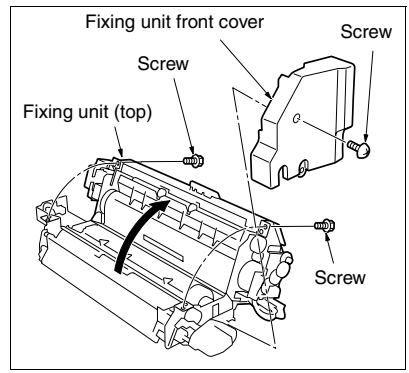
Caution: After installing the fixing unit, turn the pressure release lever clockwise and return it to the original position.

[2] Removing and Reinstalling the Fixing Unit (Top)

⚠Caution:
Before opening the fixing unit (top), check that the pressure release lever is turned counterclockwise and the bottom roller pressure is released.

a. Procedure

(1) Remove the fixing unit.
(2) Remove one screw to detach the fixing unit front cover.
(3) Remove two screws to open the fixing unit (top).

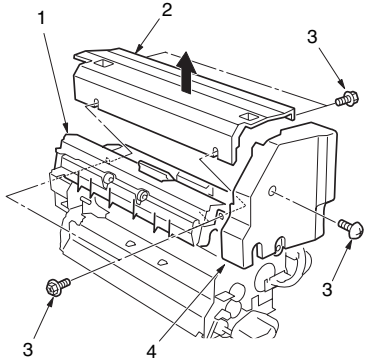


(4) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Web Cover

a. Procedure

(1) Remove the fixing unit.
(2) Remove the fixing unit front cover.
(3) Open the fixing separation claw (upper) unit and remove two screws inside.
(4) Remove the screws and detach the web cover.



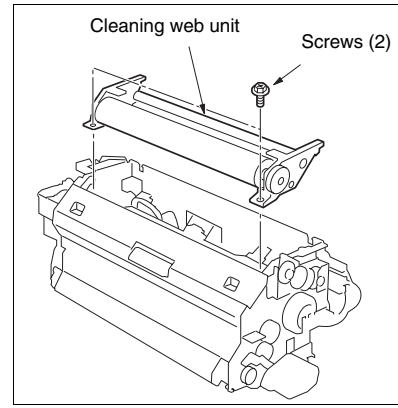
1. Fixing separation claw (upper) unit
2. Web cover
3. Screws
4. Fixing unit front cover

(5) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Cleaning Web

a. Procedure

(1) Draw out the ADU stand. (See "ADU UNIT.")
(2) Remove the web cover.
(3) Remove two screws to remove the cleaning web unit.



(4) Reinstall the above parts following the removal steps in reverse.

Caution1: When reinstalling, make sure the cleaning web does not sag.

Caution2: When reinstalling, wind it until the red line of the cleaning web is fully wound to the take-up shaft.

Caution3: After replacing the cleaning web, make sure to reset the count value of the fixing unit cleaning web by "Copy Count by Parts to be Replaced (Fixed Parts)" in the 25 mode.

[5] Replacing the Fixing Heater Lamps (L2, L3)

⚠**Caution:**
Do not touch the fixing heater lamp with bare hands.

Caution1: Install the heater lamp with the manufacturers mark facing the rear.

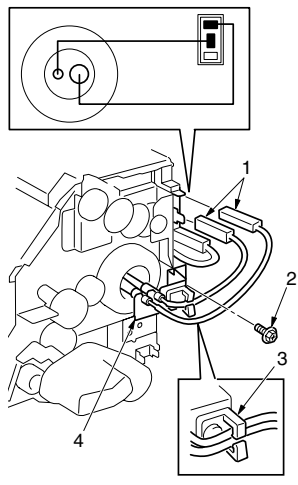
Caution2: The heater lamp should not touch the inner surface of the upper roller.

Caution3: When replacing the heater lamp, be sure to insert the lamp end in the lamp terminal securely. Also, check that the Faston terminals are connected correctly.

a. Procedure

(1) Remove the fixing unit.
(2) Remove the fixing unit front cover.
(3) Remove the screw at the front to remove the lamp fixing plate (front).
(4) Remove the front lamp harness from the harness guide to remove the two Faston terminals.

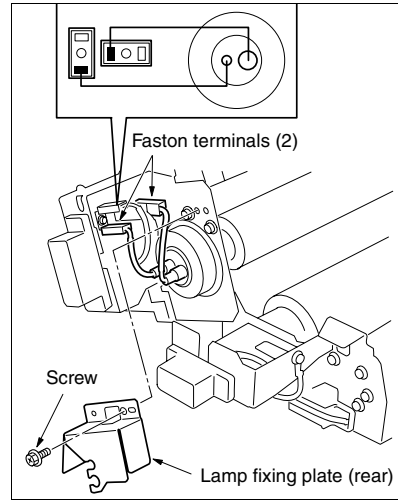
Caution: When removing the Faston terminals, be sure to hold the connector. Connector cannot be removed by pulling on the harness.



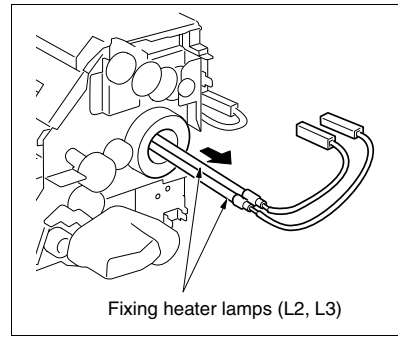
1. Faston terminals (2)
2. Screw
3. Harness guide
4. Lamp fixing plate (front)

(5) Open the fixing unit (top).
(6) Remove the screw at the far side to remove the lamp fixing plate (rear).
(7) Remove the two Faston terminals of the far side lamp.

Caution: When removing the Faston terminals, be sure to hold the connector. Connector cannot be removed by pulling on the harness.



(8) Pull out the fixing heater lamps (L2, L3) from the front side of the fixing upper roller.



(9) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the lamps, pay attention to their orientation. The size of the lamp terminal mounting hole in the front lamp fixing plate is different from that in the rear lamp fixing plate. The lamp cannot be installed properly if it is facing the opposite direction.

[6] Replacing the Fixing Heater Lamp(L4)

⚠**Caution:**
Do not touch the fixing heater lamp with bare hands.

Caution1: Install the heater lamp with the manufacturers mark facing the rear.

Caution2: The heater lamp should not touch the inner surface of the upper roller.

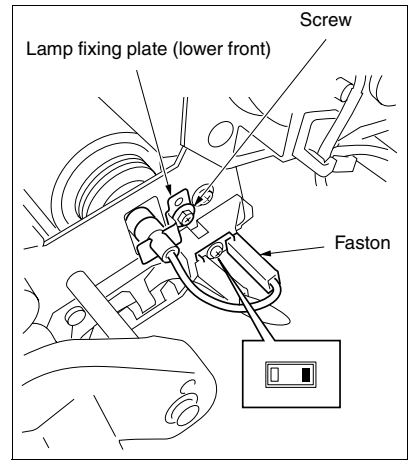
Caution3: When replacing the heater lamp, be sure to insert the lamp end in the lamp terminal securely. Also, check that the Faston terminals are connected properly.

a. Procedure

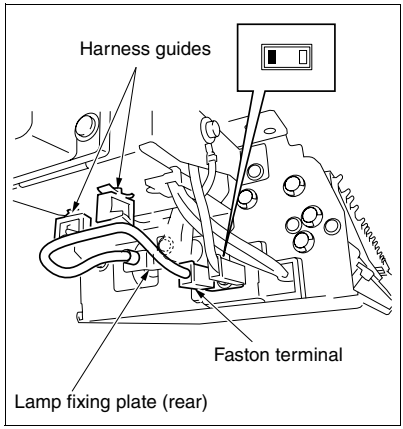
(1) Open the fixing cover (upper).

(2) Remove the screw at front to remove the lamp fixing plate (lower front).

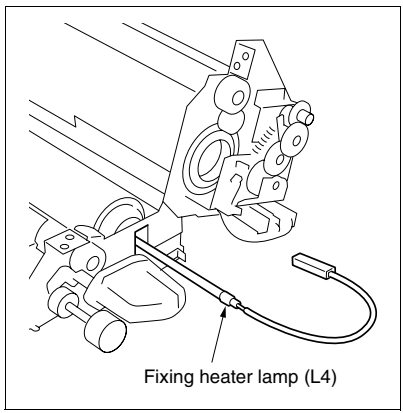
(3) Remove the Faston terminal.



(4) Remove the rear lamp harness from the two harness guide to remove the Faston terminal.



(5) Pull out the fixing heater lamp (L4) from the front side of the fixing lower roller.



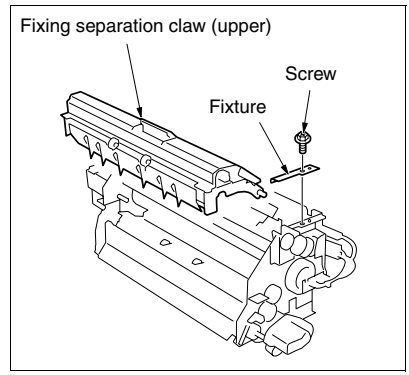
(6) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the lamp, pay attention to its orientation. The lamp cannot be installed properly if it is facing the opposite direction.

[7] Removing and Reinstalling the Fixing Separation Claw (Upper) Unit and Fixing Separation Claws (Upper)

a. Procedure

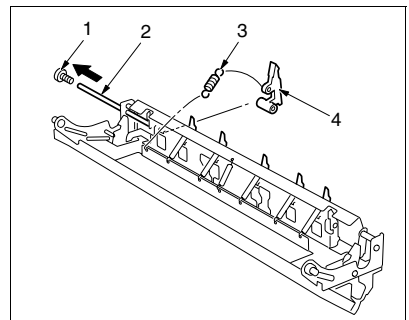
(1) Remove the fixing unit.
(2) Remove the fixing unit front cover.
(3) Remove the web cover.
(4) Remove the screw to detach the fixture.
(5) Remove the fixing separation claw (upper) unit



(6) Remove the screw to remove the upper separation claw support shaft from the fixing separation claw (upper) unit.

Caution: Be careful when removing the shaft because it bends easily.

(7) Remove six springs attached to the fixing separation claw (upper) unit.
(8) Remove six fixing separation claws (upper).



1. Screw
2. Separation claw (upper) support shaft
3. Spring
4. Fixing separation claw (upper) (6)

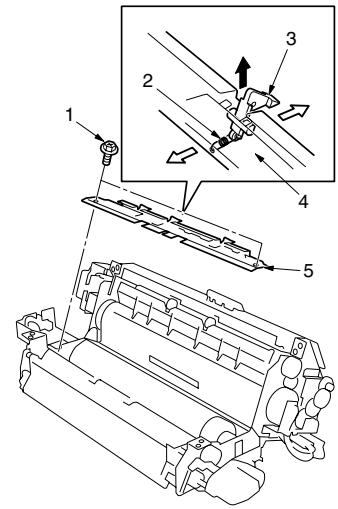
(9) Reinstall the above parts following the removal steps in reverse.

Caution: After installing the fixing separation claw (upper), move the upper claws with your finger and check that they return with the force of the spring.

[8] Removing and Reinstalling the Fixing Separation Claw (Lower) Unit and Fixing Separation Claws (Lower)

a. Procedure

(1) Remove the fixing unit.
(2) Open the fixing unit (upper).
(3) Remove two screws to detach the fixing separation claw (lower) assembly.
(4) Remove the three springs from the three fixing separation claws (lower).
(5) Slide the frame holding the fixing separation claws (lower) and remove the three claws.



1. Screws (2)
2. Spring
3. Fixing separation claws (lower) (3)
4. Frame
5. Fixing separation claws (lower) assembly

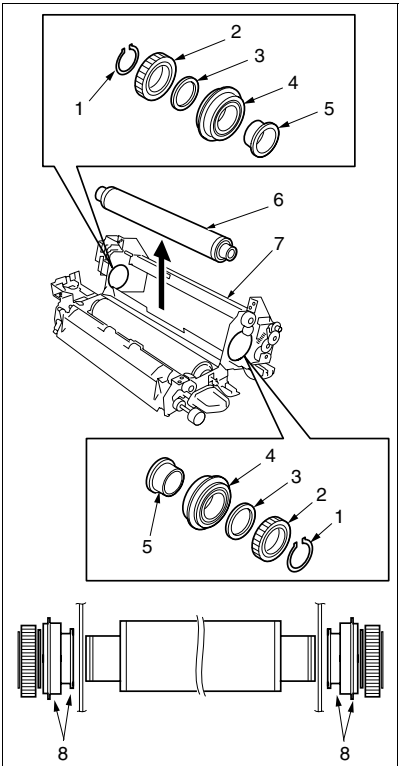
(6) Reinstall the above parts following the removal steps in reverse.

Caution: After installing the fixing separation claw (lower), check that the frame moves smoothly.

[9] Removing and Reinstalling the Fixing Upper Roller

a. Procedure

(1) Remove the fixing unit.
(2) Remove the fixing unit front cover.
(3) Remove the fixing separation claw (upper) unit.
(4) Open the fixing unit (top).
(5) Remove the fixing heater lamps (L2, L3).
(6) Remove the two C-rings, two gears, two bearings, two washers and two insulating sleeves from the fixing upper roller.
(7) Remove the fixing upper roller from the frame.



1. C-ring
2. Gear
3. Washer
4. Bearing
5. Insulating sleeve
6. Fixing upper roller
7. Fixing unit (upper)
8. Collars

(8) Reinstall the above parts following the removal steps in reverse.

Caution1: Before reinstalling the insulating sleeve, coat the inside with Tri-flow.

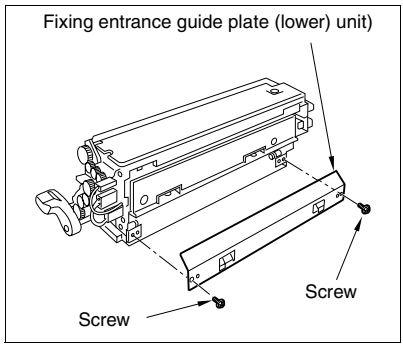
Caution2: Reinstall the bearings and insulating sleeves with the collars facing the directions shown in the figure.

[10] Removing and Reinstalling the Fixing Lower Roller

a. Procedure

(1) Remove the fixing unit.

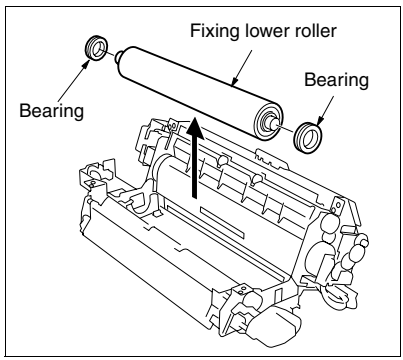
(2) Remove two screws to remove the fixing entrance guide plate (lower)



(3) Remove the fixing separation claw (lower) unit.

(4) Remove the fixing lower roller upward.

(5) Remove two bearings from the fixing lower roller.



(6) Reinstall the above parts following the removal steps in reverse.

Caution: The fixing entrance guide plate (lower) should be pressed against the fixing upper roller bearing when installing.

[11] Removing and Reinstalling the Decurler roller

a. Procedure

(1) Remove the fixing unit.

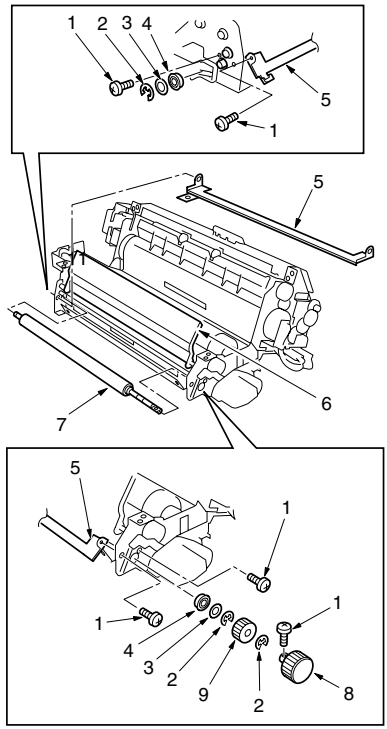
(2) Open the fixing unit (top).

(3) Lift the fixing exit guide plate (upper) and remove two screws to remove the fixing exit guide plate (lower).

(4) Remove the screw to detach the jam handling release knob.

(5) From the front side, remove one E-ring, one gear, one E-ring, one washer, one screw, and bearing in this order.

(6) From the rear side, remove one E-ring, one washer, one screw, and bearing in this order and then remove the decurler roller from the frame.



1. Screw
2. E-ring
3. Washer
4. Bearing
5. Fixing exit guide plate (lower)
6. Fixing exit guide plate (upper)
7. Decurler roller
8. Jam handling release knob
9. Gear

(7) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling, check that the gear is installed correctly.

[12] Removing and Reinstalling the Fixing Temperature Sensors 1 and 2

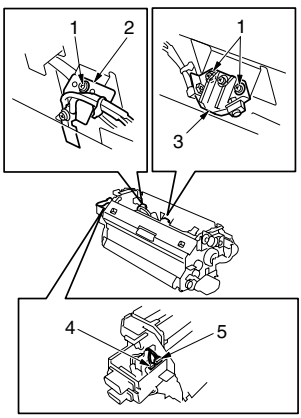
Caution1: After reinstalling fixing temperature sensor 2, make sure that the sensor touches the fixing upper roller.

Caution2: Make sure the sensor wires do not touch the fixing upper roller.

Caution3: When reinstalling fixing temperature sensor 1, adjust its position using the positioning jig (4024-2990-01) and secure it with screws. Be sure to apply screw lock agent to the screws. This adjustment should be made in a pressured state.

a. Removal procedure

(1) Remove the fixing unit.
(2) Remove the web cover.
(3) Remove the cleaning web.
(4) Disconnect the two relay connectors (fixing temperature sensor 1, CN52; fixing temperature sensor 2, CN53) and release the sensor wires from the cable guides.
(5) Remove two screws to detach fixing temperature sensor 1.
(6) Remove one screw to detach fixing temperature sensor 2.



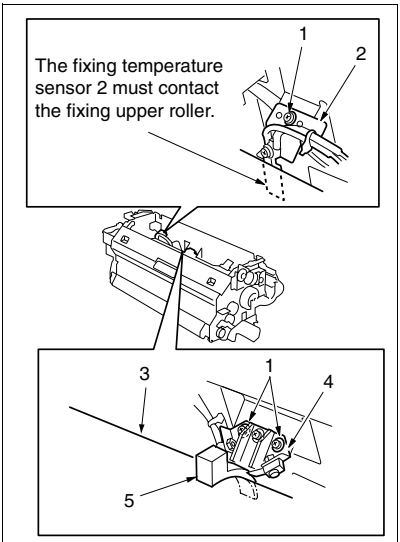
1. Screws
2. Fixing temperature sensor 2
3. Fixing temperature sensor 1
4. Fixing temperature sensor 1 (CN52)
5. Fixing temperature sensor 2 (CN53)

b. Reinstallation procedure

(1) Secure fixing temperature sensor 2 to the fixing plate with a screw.

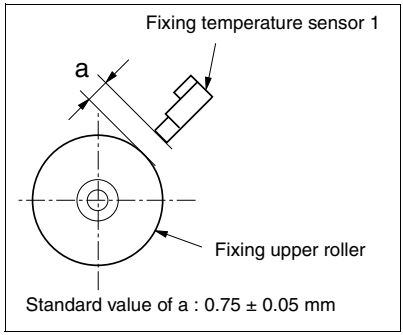
(2) Make sure that fixing temperature sensor 2 touches the fixing upper roller. If they do not touch each other, be sure to bring the sensor in contact with the roller.

(3) Set a fixing temperature sensor positioning jig between fixing temperature sensor 1 and fixing upper roller, and secure fixing temperature sensor 1 with two screws so that the distance between the sensor and roller is equal to the thickness of the jig.



1. Screws
2. Fixing temperature sensor 2
3. Fixing upper roller
4. Fixing temperature sensor 1
5. Positioning jig (4024-2990-01)

f) Set the distance "a" between the fixing temperature sensor 1 and fixing upper roller so that it is equal to the thickness of the positioning jig.



(4) Apply screw lock agent to the two screws securing fixing temperature sensor 1.

(5) Secure the wires of fixing temperature sensors 1 and 2 in the wire guides and connect their connectors.

(6) Reverse the removal procedure to reinstall other parts.

[13] Removing and Reinstalling the Thermostat/U (TS1)

⚠**Caution:**

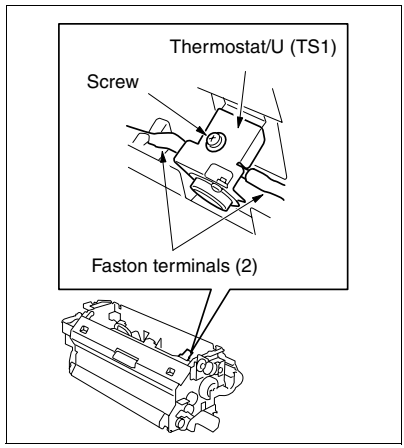
This is an important safety part. (P/N: SP00-0020) Be sure to observe the following cautions and steps when removing or reinstalling.

Caution1: After reinstalling the thermostat/U, make sure that its wires do not touch the fixing upper roller.

Caution2: When reinstalling the thermostat/U, adjust its position using the positioning jig (4024-2152-01) and secure it with screws. Be sure to apply screw lock agent to the screws. This adjustment should be made in a pressured state.

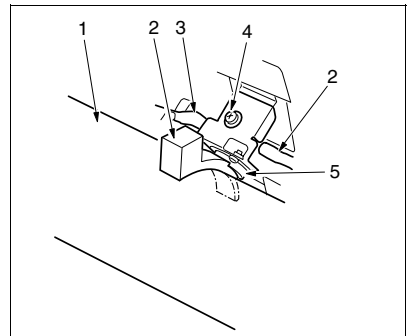
a. Removal procedure

(1) Remove the fixing unit.
(2) Remove the web cover.
(3) Remove the cleaning web.
(4) Remove one screw and two Faston terminals to detach the thermostat/U.



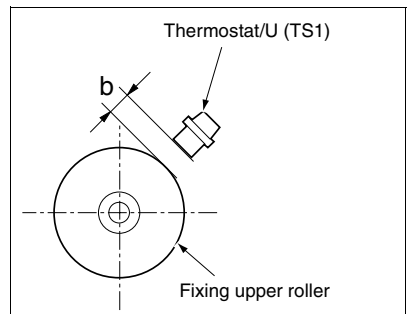
b. Reinstallation procedure

(1) Connect two Faston terminals to the thermostat/U.
(2) Set a thermostat positioning jig (4024-2152-01) between the thermostat/U and fixing upper roller and secure the thermostat/U with one screw so that the distance between the roller and thermostat/U is equal to the thickness of the jig.



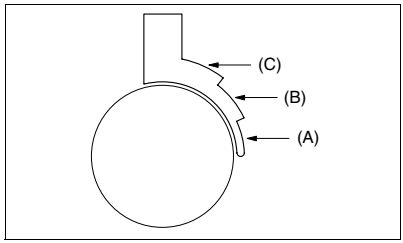
1. Fixing upper roller
2. Positioning jig (4024-2152-01)
3. Faston terminal
4. Screw
5. Thermostat/U (TS1)

f) Set the distance "a" between the thermostat/U and fixing upper roller so that it is equal to the thickness (B) of the positioning jig.



Standard value of b : 3.75 ± 0.1 mm

g) When making the adjustment, make sure that the thermostat/U does not ride on the positioning jig (C).



(3) Apply screw lock agent to the screw securing the thermostat/U.
(4) Reverse the removal procedure to install other parts.

[14] Removing and Reinstalling the Thermostat/L (TS2)

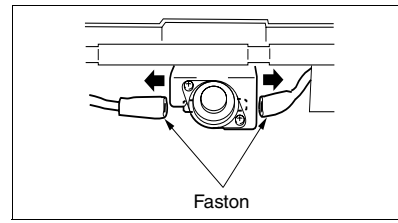
⚠Caution:
This is an important safety part. Be sure to observe the following cautions and steps when removing or reinstalling.

Caution1: After reinstalling the thermostat/L, make sure that its wires do not touch the fixing lower roller.

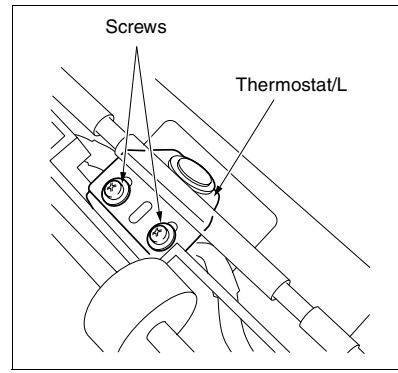
Caution2: When reinstalling the thermostat/L, adjust its position using the positioning jig (4024-2992-01) and secure it with screws. Be sure to apply screw lock agent to the screws. This adjustment should be made in a pressured state.

a. Removal procedure

(1) Remove the fixing lower roller.
(2) Close the fixing cover (top).
(3) Remove the two Faston terminals of the thermostat/L through the fixing entrance side.

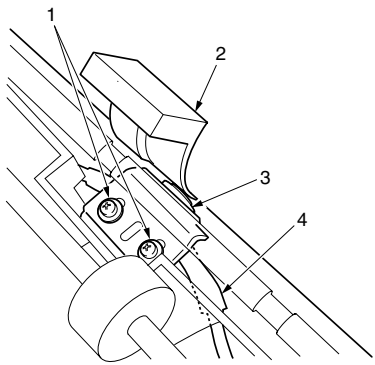


(4) Open the fixing cover (top).
(5) Remove two screws to remove the thermostat/L.



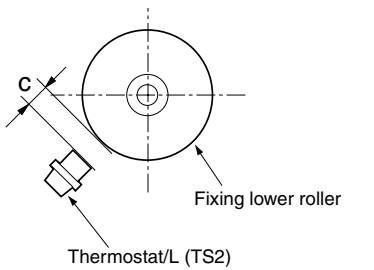
b. Reinstallation procedure

(1) Set a part (a) thermostat/L positioning jig (4024-2992-01) between the thermostat/L and the fixing lower roller, and secure the thermostat/L with two screws so that the distance between the thermostat/L and roller is equal to the thickness of the jig.



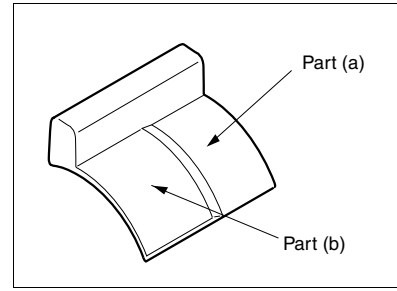
1. Screws
2. Positioning jig (4024-2992-01)
3. Thermostat/L (TS2)
4. Faston terminal

e) Set the distance "b" between the thermostat/L and the fixing lower roller so that it is equal to the thickness of the positioning jig.



Standard value of c : 1.75 ± 0.25 mm

f) After setting the distance "b", remove the thermostat/L positioning jig, and make sure that the part (b) thermostat/L positioning jig cannot be inserted in a space between the fixing lower roller and the thermostat/L.



(2) Apply screw lock agent to the two screws securing the thermostat/L.

(3) Reverse the removal procedure to reinstall other parts.

EXTERNAL SECTION

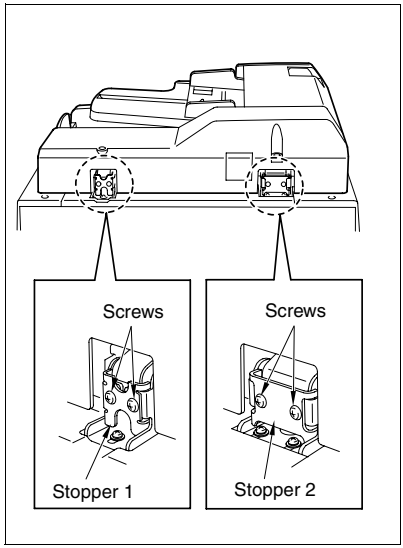
[1] Removing the RADF

⚠ **Caution**:
Make sure power cord of the main unit has been unplugged from the wall outlet.

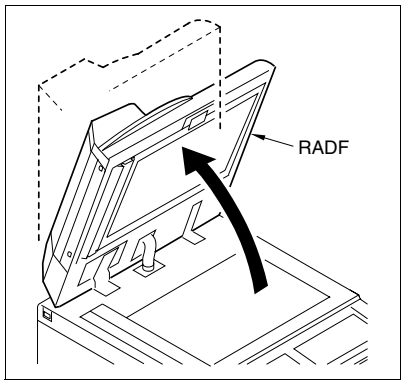
a. Procedure

(1) Remove the rear cover. (See the external section of the main body.)

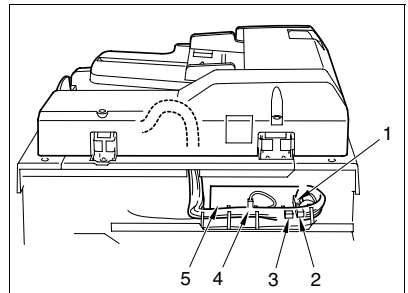
(2) Remove two screws to detach the two stoppers.



(3) Open the RADF to the upright position.

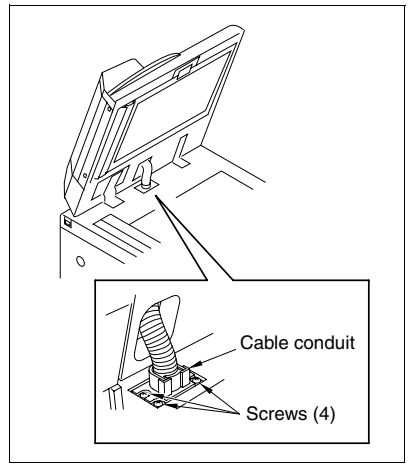


(4) Remove four connectors (CN612 to CN615) from the scanner drive board (SCDB) on the main body.



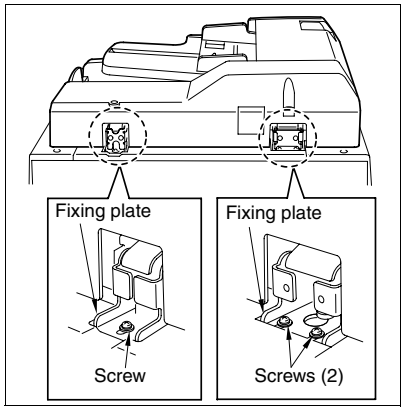
1. Connector (CN614)
2. Connector (CN612)
3. Connector (CN613)
4. Connector (CN615)
5. Scanner drive board (SCDB)

(5) Remove four screws to detach the cable conduit.



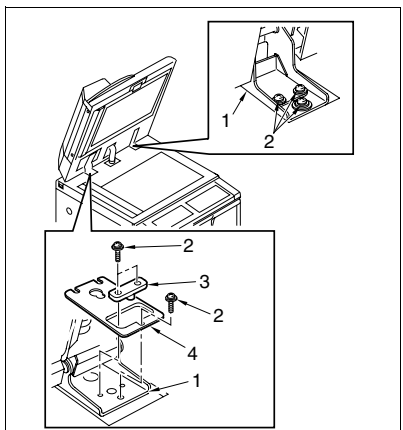
(6) Draw the cable to the top of the main body.

(7) Close the RADF. Remove three screws to detach each of two fixing plates.



(8) Open the RADF to the upright position.
(9) Remove two screws to detach the spacer and attachment from the left fixing plate.
(10) Holding the RADF, remove four screws to detach two fixing plates and remove the RADF from the main body.

Caution: When fixing plates are removed, the RADF may fall down to the rear side. Be sure to hold the RADF.



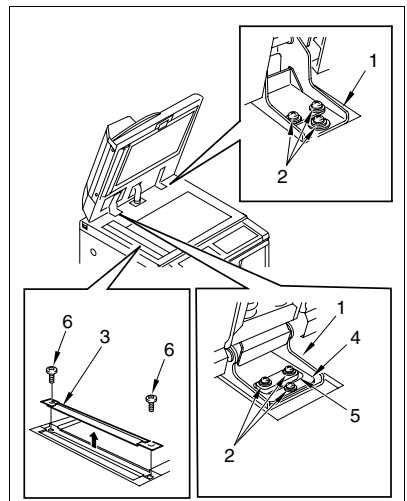
1. Fixing plate
2. Screws
3. Spacer
4. Attachment

[2] Reinstalling the RADF

⚠ **Caution**:
Make sure power cord of the main unit has been unplugged from the wall outlet.

a. Procedure

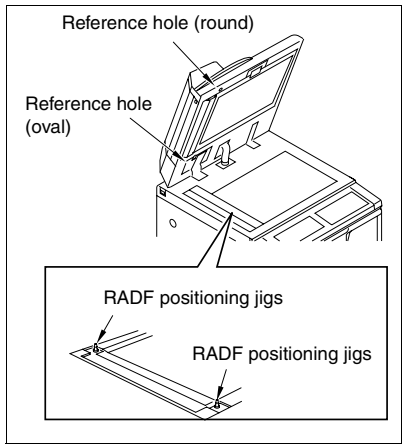
(1) Place the RADF on the top of the main unit and loosely secure each of the two fixing plates with four screws.
(2) Secure the attachment and spacer to the left fixing plate, and loosely secure it with two screws.
(3) Remove two screws to detach the original stopper plate (left).



1. Fixing plate
2. Screws (tighten temporarily)
3. Original stopper plate (left)
4. Attachment
5. Spacer
6. Screws

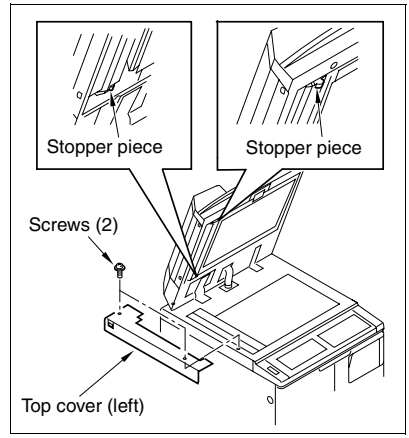
(4) Follow the removal procedure in reverse, install the cable conduit and four relay connectors (CN612 to CN615).

(5) Install two RADF positioning jigs in the mounting holes of the original stopper plates (left).
(6) Close the RADF to mate the reference holes and RADF positioning jigs.
(7) Install three screws to secure each of the two fixing plates with three screws following the removal procedure in reverse.
(8) Open the RADF and tighten all of the six screws to secure the two fixing plates.

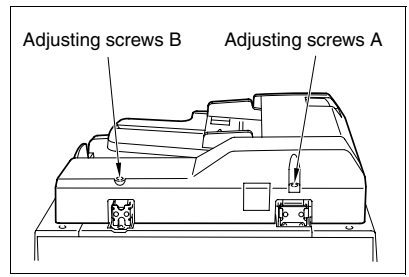


(9) Remove the RADF positioning jigs and install the original stopper plate (left) with two screws.
(10) Remove two screws and uninstall the top cover (left).

(11) Close the RADF and check whether both stopper pieces on the RADF-side touch the slit glass.



(12) If both stopper pieces do not touch the slit glass at the same time, make adjustments using adjusting screws A and B alternately.
(13) Perform steps 11 and 12 repeatedly until the two stopper pieces touch the slit glass at the same time.



(14) For further installation, follow the removal procedure in reverse.

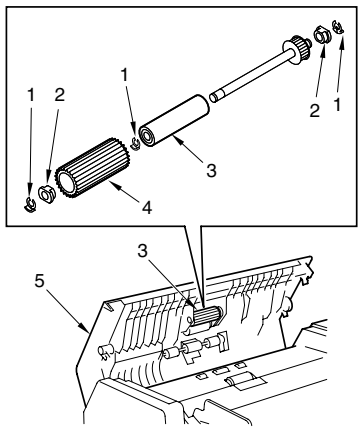
ORIGINAL FEED/CONVEYANCE/EXIT SECTION

[1] Replacing the Pickup Roller and Conveyance Roller Rubber

⚠ **Caution**:
Make sure power cord of the main unit has been unplugged from the wall outlet.

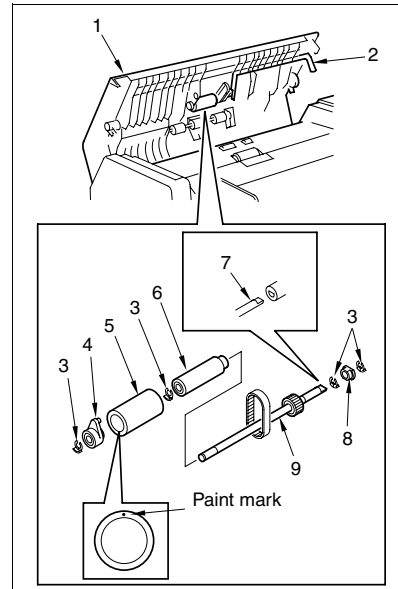
a. Procedure

(1) Open the Jam access cover.
(2) Remove three stop rings, shift each of the two bearings outward and detach them.
(3) Remove the pickup roller assembly to detach the pickup roller.
(4) Remove the pickup roller rubber from the pickup roller.



1. Stop ring
2. Bearing
3. Pickup roller
4. Pickup roller rubber
5. Jam access cover

(5) Remove four stop rings, and shift the gear (with a pin) and bearing outward.
(6) Shift the original feed roller assembly to the left until it stops and lift it up to remove it.
(7) Remove the gear (with a pin) and remove the original feed roller.
(8) Remove the original feed roller rubber from the original feed roller.



1. Jam access cover
2. Sensor arm
3. Stop rings
4. Gear (with a pin)
5. Original feed roller rubber
6. Original feed roller
7. D-cut unit
8. Bearing
9. Original feed roller shaft

(9) Reinstall the above parts following the removal procedure in reverse.

Caution1: Make sure that the original feed roller is installed in the correct direction.
Caution2: Install the D-cut shaft of the original feed roller assembly while inserting it in the receiver side.
Caution3: Make sure not to damage the sensor arm during installation.

[2] Cleaning the Cleaning Pad

⚠ **Caution**:

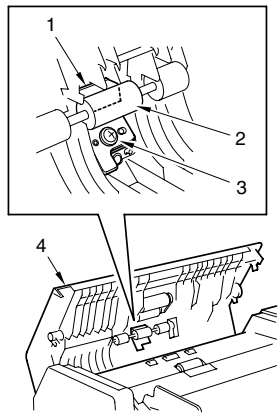
Make sure power cord of the main unit has been unplugged from the wall outlet.

a. Procedure

(1) Open the Jam access cover.

(2) Remove one screw to detach the cleaning pad.

(3) Using a blower brush, clean the cleaning pad.



1. Cleaning pad
2. Registration idler roller
3. Screw
4. Jam access cover

(4) Reinstall the above parts following the removal steps in reverse.

[3] Replacing the Double Feed Prevention Roller / Double Feed Prevention Roller Rubber

⚠ **Caution**:

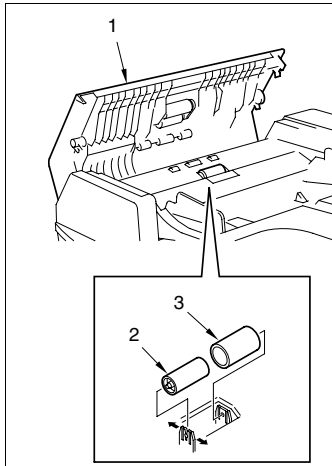
Make sure power cord of the main unit has been unplugged from the wall outlet.

a. Procedure

(1) Open the Jam access cover.

(2) Open the retaining clip and remove the double feed prevention roller.

(3) Remove the double feed prevention roller rubber from the double feed prevention roller.



1. Jam access cover
2. Double feed prevention roller
3. Double feed prevention roller rubber

(4) Reinstall the above parts following the removal procedure in reverse.

Caution: Make sure that the double feed prevention roller is installed in the correct direction.

PAPER FEED SECTION

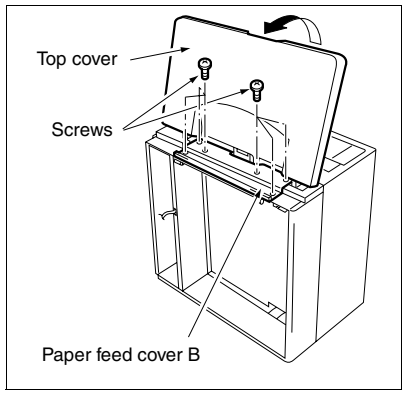
[1] Cleaning the Paper Dust Removing Brush

⚠Caution: If LT is connected to the main body, make sure that main body power plug is disconnected from the power outlet.

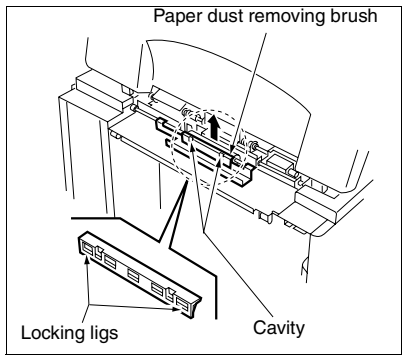
a. Procedure

(1) Open the top cover.

(2) Remove six screws to detach the paper feed cover B.



(3) Insert a flat bladed screwdriver in the cavities (in two locations) for paper dust removing brush to release the locking lugs, then remove the paper dust removing brush.



(4) Clean the paper dust removing brush using a blower brush.

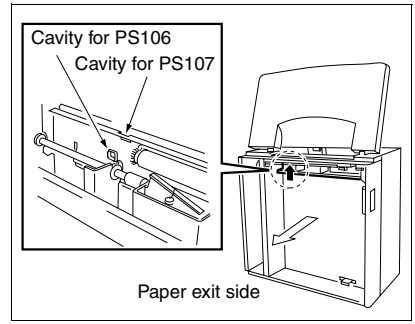
(5) Reinstall the above parts following the removal steps in reverse.

[2] Cleaning the LT feed PS (PS106)/LT first paper feed PS (PS107)

⚠Caution: If LT is connected to the main body, make sure that main body power plug is disconnected from the power outlet.

a. Procedure

(1) Looking into the paper exit side of the LCT from below, and clean sensors through the cavity for LT feed PS (PS106) and the cavity for LT first paper feed (PS107) using a blower brush.



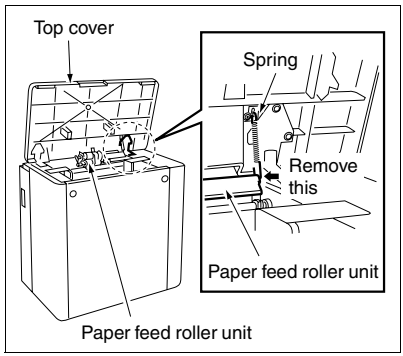
[3] Removing and Reinstalling the Paper Feed Roller Unit

⚠**Caution: If LT is connected to the main body, make sure that main body power plug is disconnected from the power outlet.**

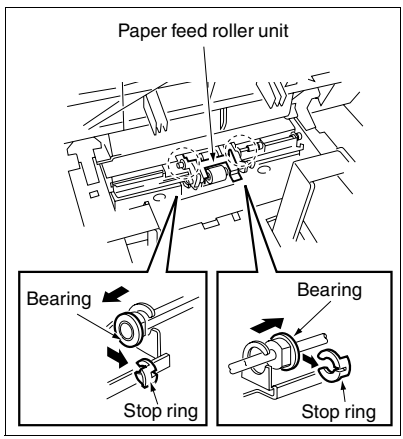
a. Procedure

(1) Open the top cover.

(2) Remove the spring from the paper feed roller unit.



(3) After removing two stop rings, remove the two bearings outward to remove the paper feed roller unit.



(4) Reinstall the above parts following the removal steps in reverse.

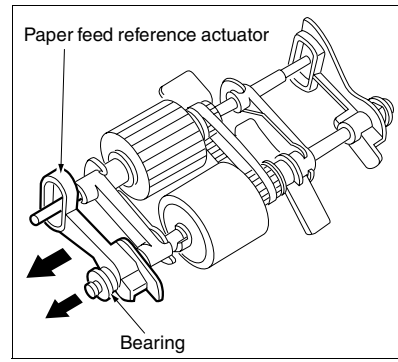
[4] Replacing the Paper Feed Roller Rubber/Feed Roller Rubber

⚠**Caution: If LT is connected to the main body, make sure that main body power plug is disconnected from the power outlet.**

a. Procedure

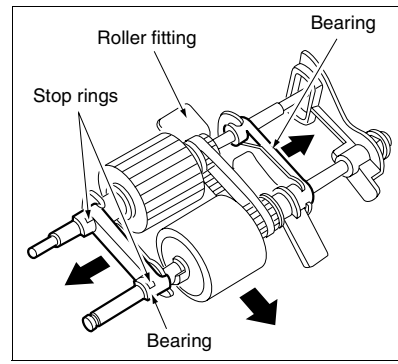
(1) Remove the paper feed roller unit.

(2) Remove the bearing and paper feed reference actuator.

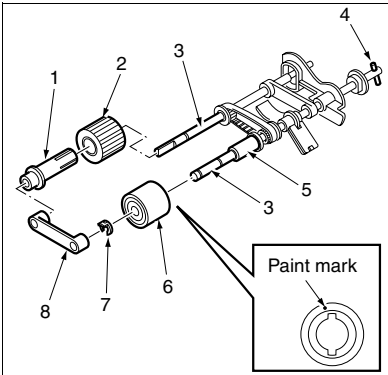


(3) Remove two stop rings.

(4) Remove two bearings outward to detach the roller section from the roller fitting.



(5) Remove the bearing from the opposite side of the coupling, then remove the paper feed roller from the shaft.
(6) Remove the stop ring to pull the feed roller from the shaft.
(7) Remove the rubber from each roller.



1. Paper feed roller
2. Paper feed roller rubber
3. Shaft
4. Coupling
5. Feed roller
6. Feed roller rubber
7. Stop ring
8. Bearing

(8) Reinstall the above parts following the removal steps in reverse.

Caution1: Make sure rollers and rubber portions are oriented properly when reinstalling them.

Caution2: Make sure the one-way clutch direction is correct.

Caution3: Check whether grease or the like is present on each roller.

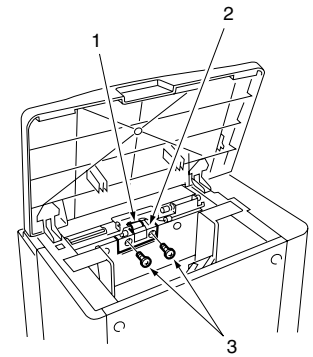
[5] Replacing the Double Feed Prevention Roller Rubber

⚠**Caution: If LT is connected to the main body, make sure that main body power plug is disconnected from the power outlet.**

a. Procedure

Caution: With the power held on, press the LT tray down switch (SW100) to move the up/down plate down to the bottom in advance.

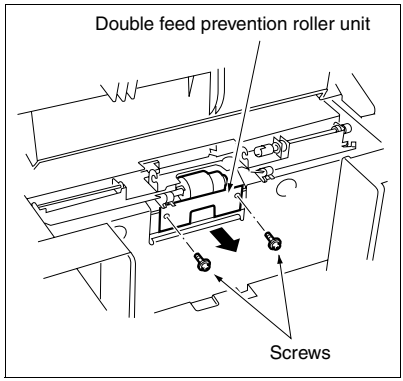
(1) Remove the paper feed roller unit.
(2) Remove two screws to detach the double feed prevention roller unit cover.



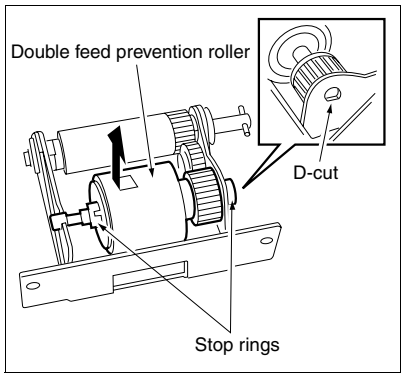
1. Double feed prevention roller
2. Double feed prevention roller unit cover
3. Screws

(3) Remove two screws to detach the double feed prevention roller unit.

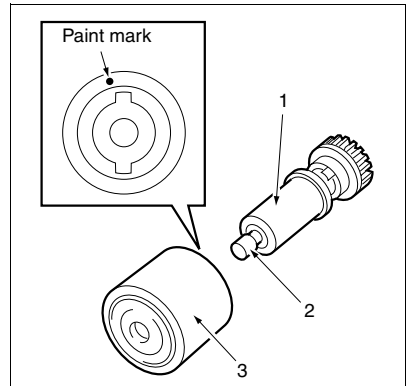
Caution: When reinstalling the double feed prevention roller unit, tighten the screws on the rear side first.



(4) Remove two stop rings, fit the shaft into the D-cut in the fitting, and remove the double feed prevention roller together with the shaft.



(5) Remove the double feed prevention roller rubber from the double feed prevention roller.



1. Double feed prevention roller
2. Shaft
3. Double feed prevention roller rubber

(6) Reinstall the double feed prevention roller in the reverse order of the removal procedure.

Caution1: Make sure the double feed prevention roller rubber is oriented properly when reinstalling it.

Caution2: Check whether scratch or the like is visible on the pet cover for the drive gear.

Caution3: Check whether grease or the like is present on double feed prevention roller.

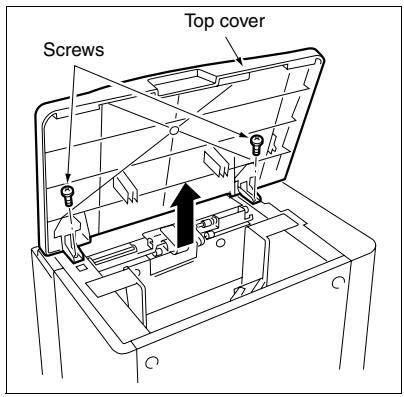
[6] Replacing the LT feed MC (MC101)/LT first paper feed MC (MC102)

a. Procedure

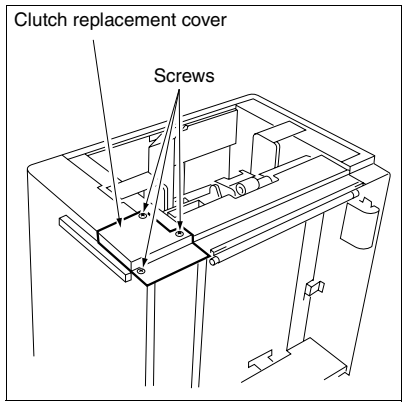
(1) Open the top cover.

(2) Remove the spring from the paper feed roller unit.

(3) Remove two screws to detach the top cover.

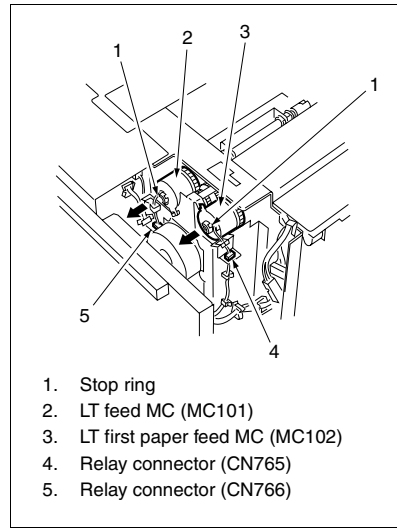


(4) Remove three screws to detach the clutch replacement cover.



(5) Disconnect two relay connectors (CN765, CN766) of the clutches.

(6) Remove the stop ring to detach each clutch.



1. Stop ring
2. LT feed MC (MC101)
3. LT first paper feed MC (MC102)
4. Relay connector (CN765)
5. Relay connector (CN766)

(7) Reinstall the above parts following the removal steps in reverse.

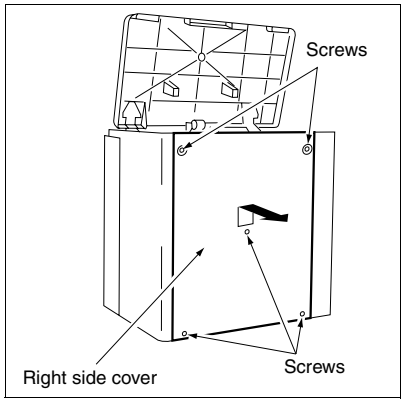
Caution: When installing each MC, make sure that the stopper of each clutch is on the predefined position.

[7] Replacing the A4LCT Up/Down Wires

Caution: With the power held on, press the LT tray down switch (SW100) to move the up/down plate down to the bottom in advance.

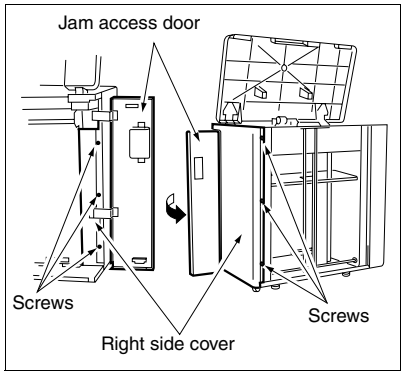
a. Procedure

(1) Open the top cover.
(2) Remove the clutch replacement cover.
(3) Remove five screws to detach the right side cover.

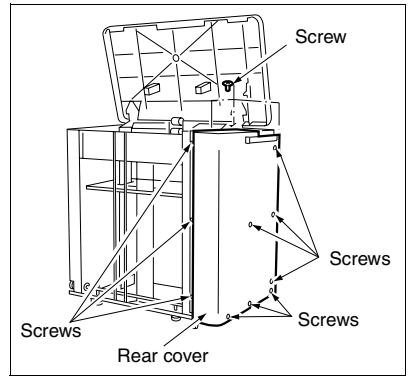


(4) After opening the jam access door, remove six screws to detach the front cover.

Caution: When removing the front cover, close the jam access door after removing the screws.

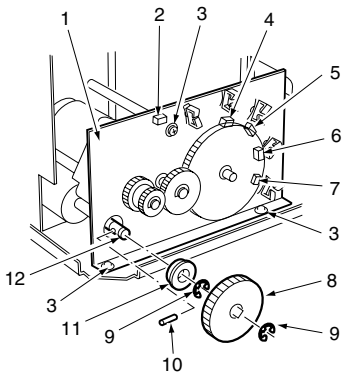


(5) Remove twelve screws to detach the rear cover.



(6) Remove the five relay connectors (CN749, CN780, CN781, CN782, CN783) to disconnect the wiring harness from the up/down motor mounting assembly.
(7) Remove the E-ring to detach the up/down gear.
(8) Pull the pin from the shaft.
(9) Remove the E-ring to detach the bearing.

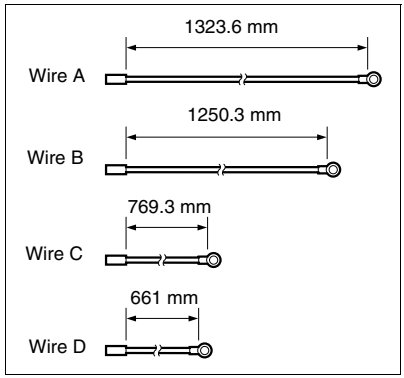
(10) Remove three screws to detach the up/down motor assembly.



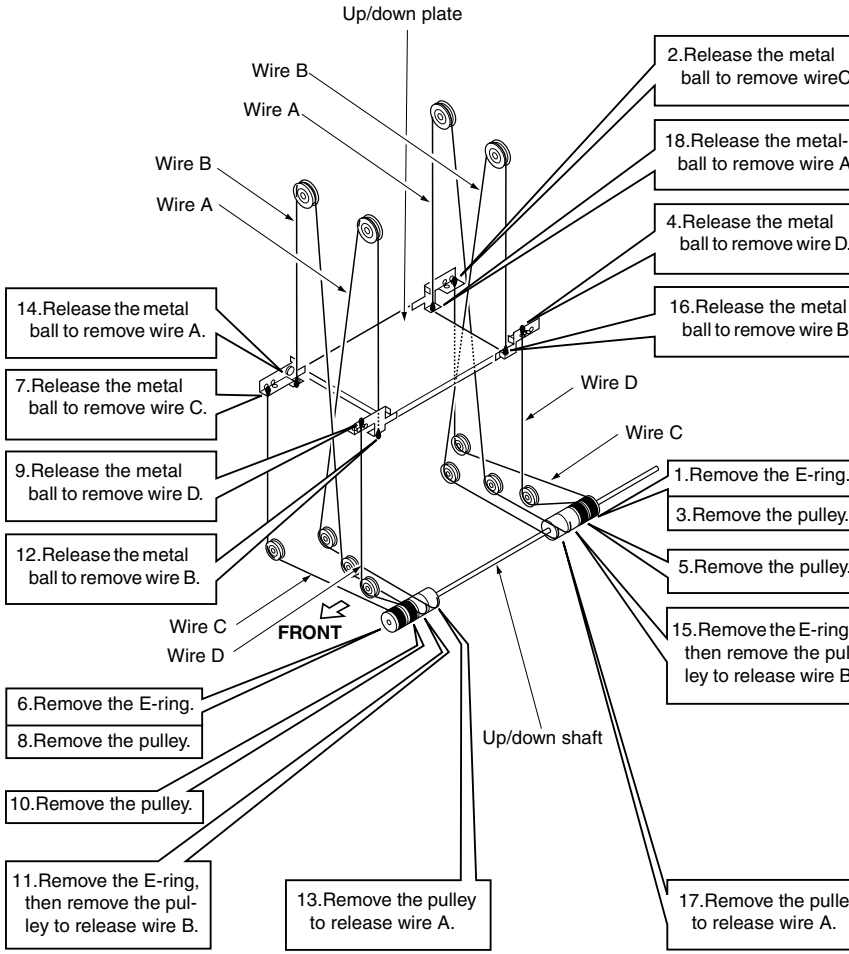
1. Up/down motor mounting assembly
2. Relay connector (CN749)
3. Screw
4. Relay connector (CN780)
5. Relay connector (CN781)
6. Relay connector (CN782)
7. Relay connector (CN783)
8. Up/down gear
9. E-ring
10. Pin
11. Bearing
12. Shaft

(11) Replace the up/down wire following the instructions in “Removing Up/Down Wires” and “Installing Up/Down Wires.”

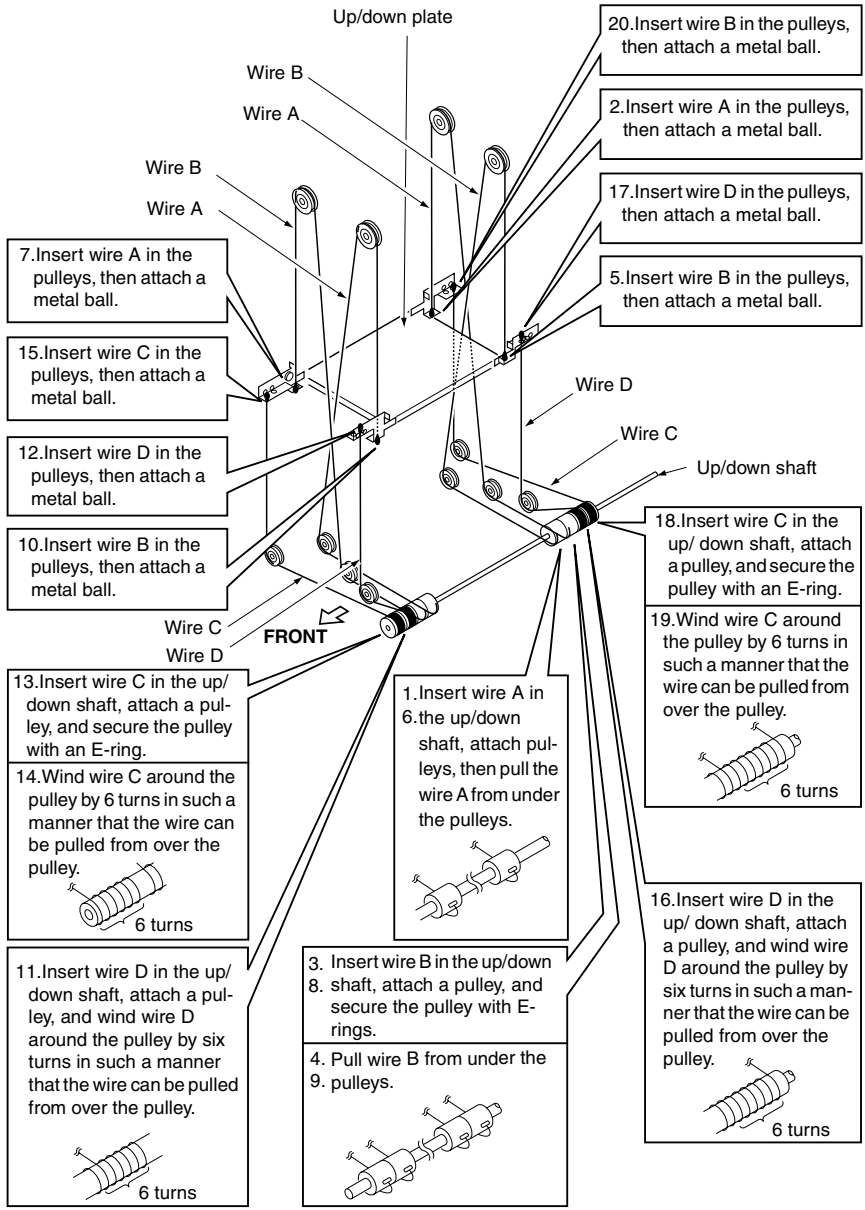
Caution: Two sets of four up/down wires with different length, one set at the front and the other at the back, are used. Wires with the same length can be used either at the front or back if they are used in the same location.



<Removing the Up/Down Wires>


Up/down plate
Wire B
Wire A
Wire B
Wire A
2.Release the metal ball to remove wireC.
18.Release the metal-ball to remove wire A.
4.Release the metal ball to remove wire D.
16.Release the metal ball to remove wire B.
14.Release the metal ball to remove wire A.
7.Release the metal ball to remove wire C.
9.Release the metal ball to remove wire D.
12.Release the metal ball to remove wire B.
Wire D
Wire C
1.Remove the E-ring.
3.Remove the pulley.
5.Remove the pulley.
15.Remove the E-ring, then remove the pulley to release wire B.
Wire C
Wire D
FRONT
6.Remove the E-ring.
8.Remove the pulley.
10.Remove the pulley.
11.Remove the E-ring, then remove the pulley to release wire B.
13.Remove the pulley to release wire A.
Up/down shaft
17.Remove the pulley to release wire A.

<Installing the Up/Down Wires>


Up/down plate
Wire B
Wire A
Wire B
Wire A
Wire D
Wire C
Up/down shaft
Wire C
Wire D
FRONT
20.Insert wire B in the pulleys, then attach a metal ball.
2.Insert wire A in the pulleys, then attach a metal ball.
17.Insert wire D in the pulleys, then attach a metal ball.
5.Insert wire B in the pulleys, then attach a metal ball.
7.Insert wire A in the pulleys, then attach a metal ball.
15.Insert wire C in the pulleys, then attach a metal ball.
12.Insert wire D in the pulleys, then attach a metal ball.
10.Insert wire B in the pulleys, then attach a metal ball.
18.Insert wire C in the up/ down shaft, attach a pulley, and secure the pulley with an E-ring.
19.Wind wire C around the pulley by 6 turns in such a manner that the wire can be pulled from over the pulley.
6 turns
13.Insert wire C in the up/ down shaft, attach a pulley, and secure the pulley with an E-ring.
14.Wind wire C around the pulley by 6 turns in such a manner that the wire can be pulled from over the pulley.
6 turns
1.Insert wire A in
6.the up/down shaft, attach pulleys, then pull the wire A from under the pulleys.
16.Insert wire D in the up/ down shaft, attach a pulley, and wind wire D around the pulley by six turns in such a manner that the wire can be pulled from over the pulley.
6 turns
11.Insert wire D in the up/ down shaft, attach a pulley, and wind wire D around the pulley by six turns in such a manner that the wire can be pulled from over the pulley.
6 turns
3. Insert wire B in the up/down
8. shaft, attach a pulley, and secure the pulley with E-rings.
4. Pull wire B from under the
9. pulleys.

(12) After installing the up/down wires, make sure the up/down wires are passed in the grooves in the pulleys properly and wires do not run on the sides of the pulleys. Also make sure the up/down plate can be moved up and down smoothly by hand.

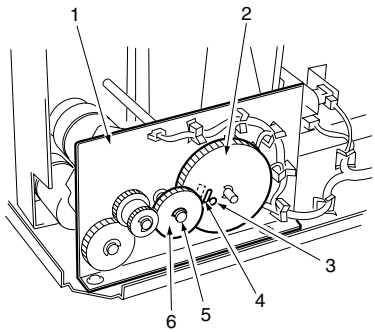
Caution: If the up/down plate does not move up and down smoothly, reinstall the up/down wires.

(13) Install the up/down wire drive motor assembly, up/down gear, and relay connectors, following the removal steps in reverse.

(14) Remove the E-ring to detach the idle gear.

(15) Rotate the remaining paper detection gear until the round hole in this gear is aligned with the oblong hole in the up/down motor mounting assembly.

Caution: Align when the up/down plate is in lowest position.



1. Up/down motor mounting assembly
2. Remaining paper detection gear
3. Round hole
4. Oblong hole
5. E-ring
6. Idle gear

(16) Install the idle gear.

(17) Attach the covers following the removal steps in reverse.

Caution1: After replacing the up/down wires, make horizontal and centering adjustment of the up/down plate. (Refer to "ADJUSTMENT SECTION.")

[8] Replacing the A3LCT Up/Down Wires

a. Procedure

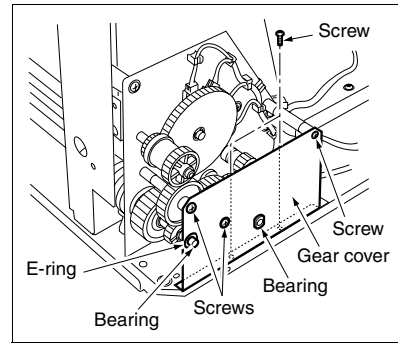
Caution: With the power held on, press the LT tray down switch (SW100) to move the up/down plate down to the bottom in advance.

(1) Remove the clutch replacement cover, side cover (right), front cover, and rear cover following the steps (1) to (5) in [7] Replacing the A4LCT Up/Down Wires.

(2) Remove the E-ring.

(3) Remove the five screws to detach the gear cover.

(4) Remove the two bearings.

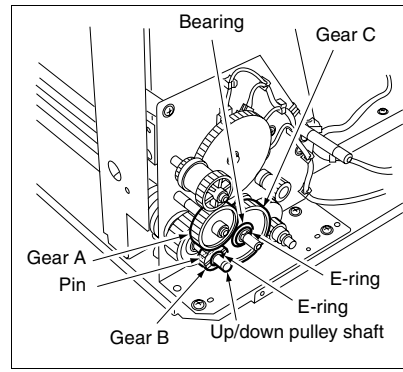


(5) Remove the gear A.

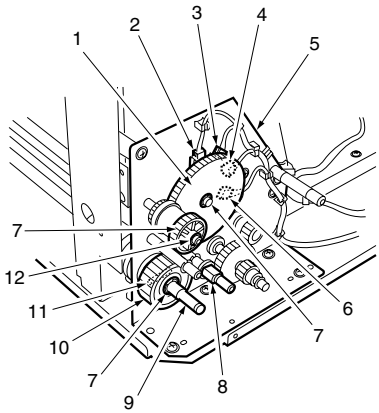
(6) Remove the E-ring to remove gear B.

(7) Remove the detent pin for gear B from the up/down pulley shaft.

(8) Remove the E-ring and bearing to remove gear C.

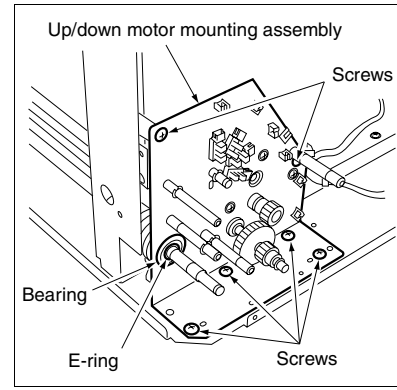


(9) Remove the bearing behind gear C.
(10) Remove the E-ring to remove the up/down gear.
(11) Remove the detent pin for up/down gear from the up/down pulley shaft.
(12) Remove the E-ring to remove gear D.
(13) Remove the E-ring to remove the remaining paper detection gear.
(14) Remove four relay connectors (CN780, CN781, CN782, and CN783) to disconnect the wiring harness from the up/down motor mounting assembly.



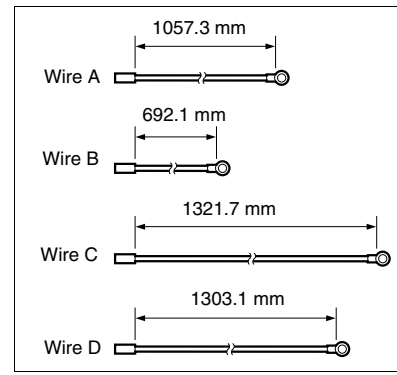
1. Remaining paper detection gear
2. Relay connector (CN780)
3. Relay connector (CN781)
4. Relay connector (CN782)
5. Up/down motor mounting assembly
6. Relay connector (CN783)
7. E-ring
8. Bearing
9. Up/down pulley shaft
10. Up/down gear
11. Pin
12. Gear D

(15) Remove the E-ring to remove the bearing.
(16) Remove the six screws to remove the up/down motor mounting assembly.

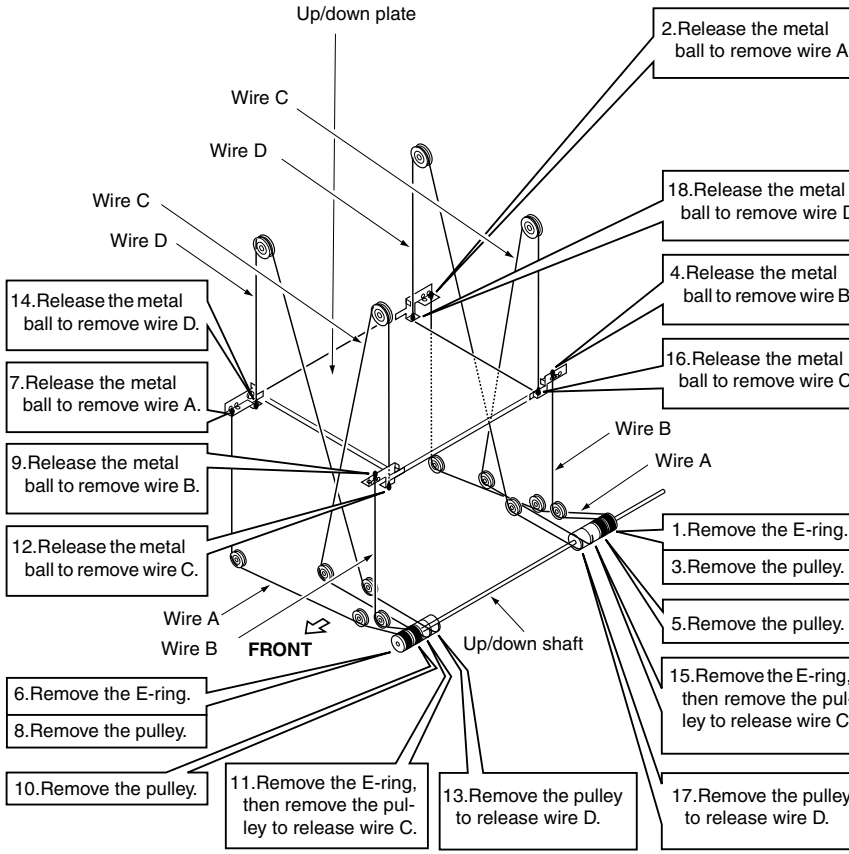


(17) Replace the up/down wires following the instructions in “Removing the Up/Down Wires” and “Installing Up/Down Wires.”

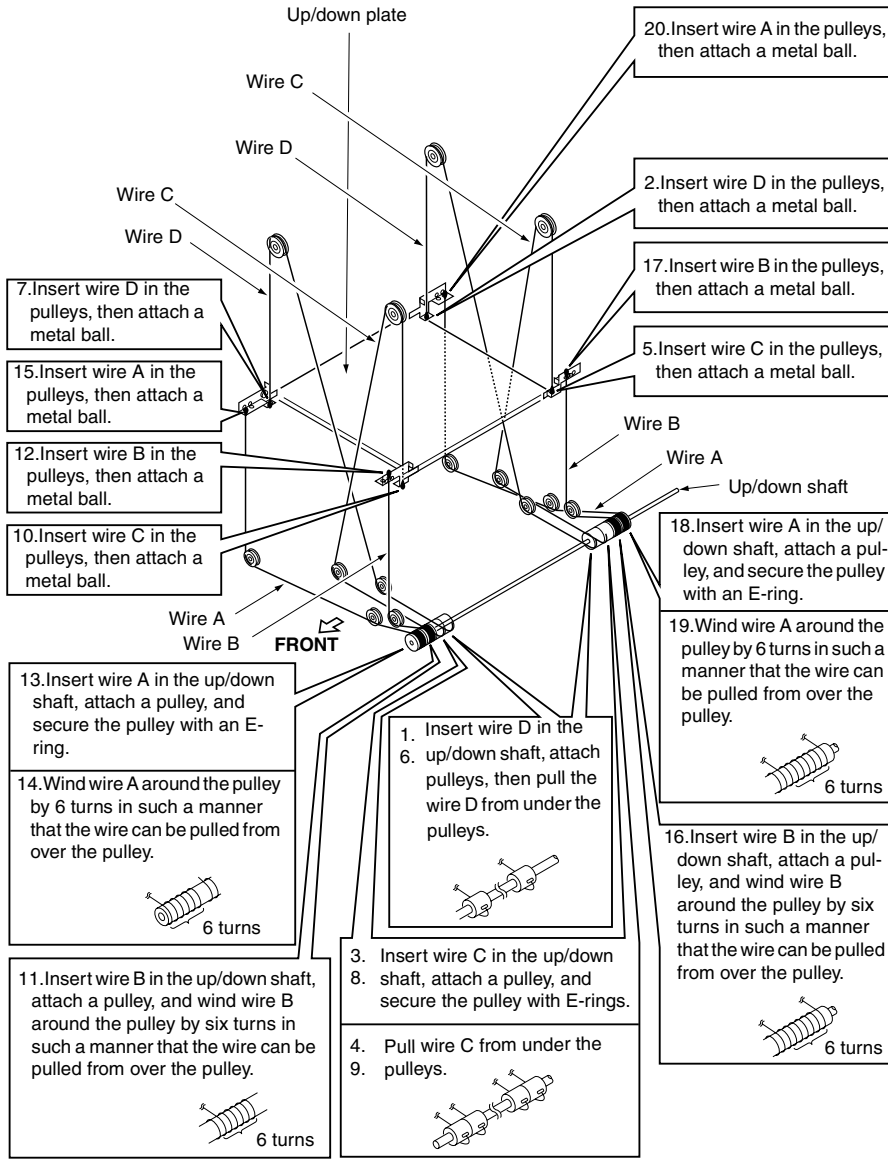
Caution: Two sets of four up/down wires with different length, one set at the front and the other at the back, are used. Wires with the same length can be used either at the front or back if they are used in the same location.



<Removing the Up/Down Wires>


Up/down plate
2.Release the metal ball to remove wire A.
Wire C
Wire D
Wire C
Wire D
18.Release the metal ball to remove wire D.
4.Release the metal ball to remove wire B.
14.Release the metal ball to remove wire D.
16.Release the metal ball to remove wire C.
7.Release the metal ball to remove wire A.
Wire B
Wire A
9.Release the metal ball to remove wire B.
1.Remove the E-ring.
12.Release the metal ball to remove wire C.
3.Remove the pulley.
5.Remove the pulley.
Wire A
Wire B
FRONT
Up/down shaft
15.Remove the E-ring, then remove the pulley to release wire C.
6.Remove the E-ring.
8.Remove the pulley.
10.Remove the pulley.
11.Remove the E-ring, then remove the pulley to release wire C.
13.Remove the pulley to release wire D.
17.Remove the pulley to release wire D.

<Installing the Up/Down Wires>

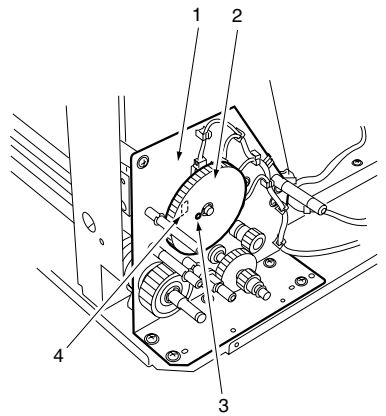

Up/down plate
Wire C
Wire D
Wire C
Wire D
20.Insert wire A in the pulleys, then attach a metal ball.
2.Insert wire D in the pulleys, then attach a metal ball.
17.Insert wire B in the pulleys, then attach a metal ball.
5.Insert wire C in the pulleys, then attach a metal ball.
7.Insert wire D in the pulleys, then attach a metal ball.
15.Insert wire A in the pulleys, then attach a metal ball.
12.Insert wire B in the pulleys, then attach a metal ball.
10.Insert wire C in the pulleys, then attach a metal ball.
Wire B
Wire A
Up/down shaft
18.Insert wire A in the up/down shaft, attach a pulley, and secure the pulley with an E-ring.
19.Wind wire A around the pulley by 6 turns in such a manner that the wire can be pulled from over the pulley.
6 turns
Wire A
Wire B
FRONT
13.Insert wire A in the up/down shaft, attach a pulley, and secure the pulley with an E-ring.
14.Wind wire A around the pulley by 6 turns in such a manner that the wire can be pulled from over the pulley.
6 turns
1. Insert wire D in the
6. up/down shaft, attach pulleys, then pull the wire D from under the pulleys.
16.Insert wire B in the up/down shaft, attach a pulley, and wind wire B around the pulley by six turns in such a manner that the wire can be pulled from over the pulley.
6 turns
3. Insert wire C in the up/down
8. shaft, attach a pulley, and secure the pulley with E-rings.
11.Insert wire B in the up/down shaft, attach a pulley, and wind wire B around the pulley by six turns in such a manner that the wire can be pulled from over the pulley.
6 turns
4. Pull wire C from under the
9. pulleys.

(18) After installing the up/down wires, check whether they are engaged with the pulleys properly and whether they do not ride over the pulleys. Next, move the up/down plate manually to check whether it moves up and down smoothly.

Caution: If the up/down plate does not move smoothly, remove the up/down wires and install them again.

(19) Install the up/down motor mounting assembly, relay connectors, remaining paper detection gear, gear D, and up/down gear following the removal steps in reverse.

(20) Rotate the remaining paper detection gear until the round hole in this gear is aligned with the oblong hole in the up/down motor mounting assembly.



1. Remaining paper detection gear
2. Up/down motor mounting assembly
3. Round hole
4. Oblong hole

Caution: Align them when the up/down plate is at the bottom.

(21) Install gear C.

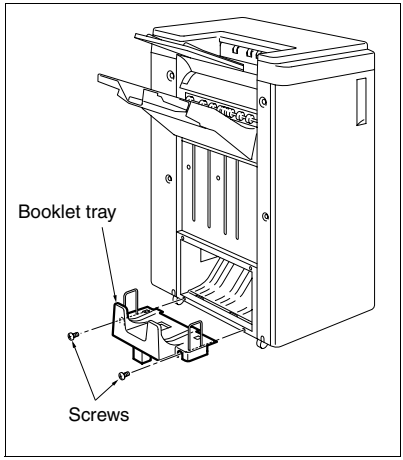
(22) Attach the other gears, gear cover, and external covers following the removal steps in reverse.

Caution: After replacing the up/down wires, make horizontal and centering adjustment of the up/down plate. (Refer to "ADJUSTMENT SECTION.")

EXTERNAL SECTION

[1] Removing and Reinstalling the Booklet Tray (FN-6 only)

(1) Remove two screws to detach the booklet tray.



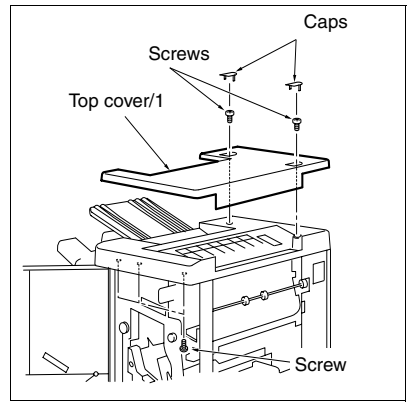
(2) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the Top Cover/1

a. Procedure

(1) Remove the two caps.

(2) Open the front door, and remove five screws to detach the top cover/1.



(3) Reinstall the above parts following the removal steps in reverse.

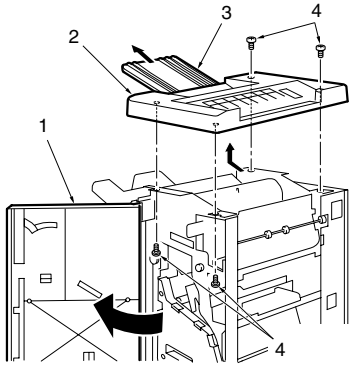
[3] Removing and Reinstalling the Top Cover/2

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

CAUTION: Uninstall the PI (optional) if installed.

a. Procedure

(1) Remove the top cover/1.
(2) Open the front door.
(3) Remove four screws, and pull out the sub-tray. Then remove the top cover/2.



1. Front door
2. Top cover/2
3. Sub-tray
4. Screws

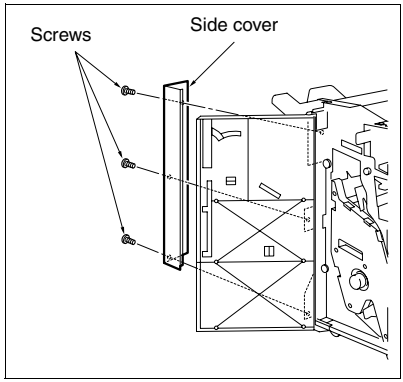
(4) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Side Cover

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

(1) Open the front door.
(2) Remove three screws, and remove the side cover.



(3) Reinstall the above parts following the removal steps in reverse.

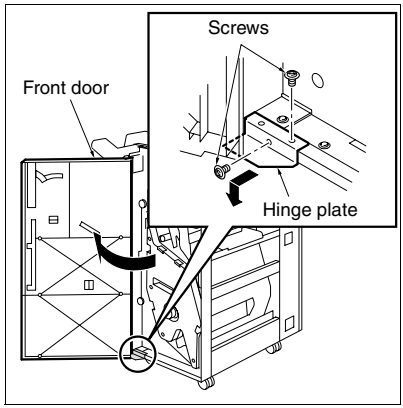
[5] Removing and Reinstalling the Front Door

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

(1) Open the front door.

(2) Remove the two mounting screws holding the hinge plate at the bottom, and remove the front door.



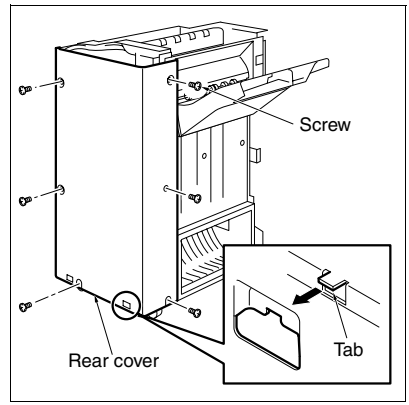
(3) Reinstall the above parts following the removal steps in reverse.

[6] Removing and Reinstalling the Rear Cover

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

(1) Remove the six mounting screws, and detach the rear cover.



(2) Reinstall the above parts following the removal steps in reverse.

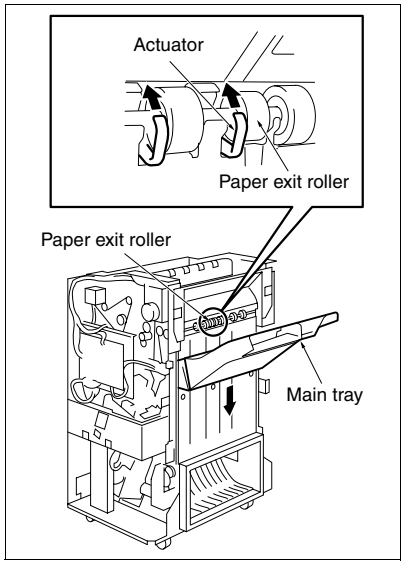
[7] Removing and Reinstalling the Main Tray

⚠ **Caution**:

After you have lowered the main tray, be sure to unplug the power cord of the main body from the power outlet.

a. Procedure

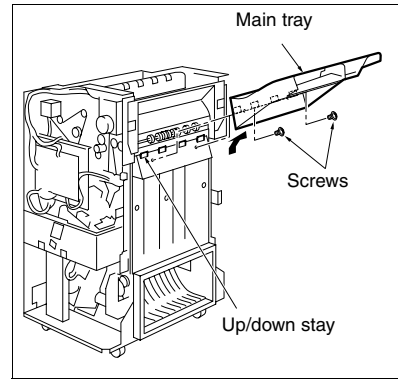
(1) Push up the actuator of the main tray exit with your finger to lower the main tray.



(2) Turn the main body's main power switch (SW1) OFF, and unplug the power cord from the power outlet.

(3) Remove the two mounting screws.

(4) Lift the main tray and detach it from the hooks of the up/down stay.



(5) Reinstall the above parts following the removal steps in reverse.

[8] Removing and Reinstalling the Main Paper Exit Opening Cover

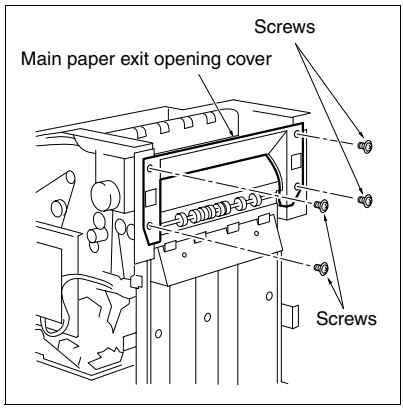
⚠ **Caution**:

Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

(1) Remove the following parts:
- Top cover/1 or optional PI (if installed)
- Top cover/2
- Side cover
- Rear cover
- Main tray

(2) Remove four screws and detach the main paper exit opening cover.



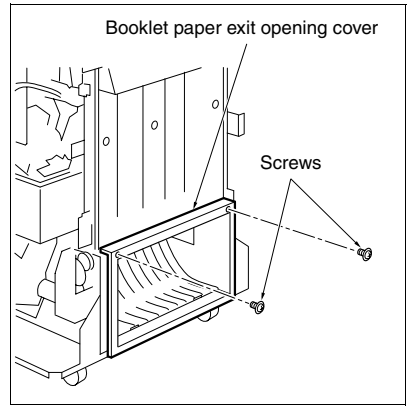
(3) Reinstall the above parts following the removal steps in reverse.

[9] Removing and Reinstalling the Booklet Paper Exit Opening Cover (FN-6 ONLY)

a. Procedure

(1) Remove the booklet tray.

(2) Remove two screws and detach the booklet paper exit opening cover.



(3) Reinstall the above parts following the removal steps in reverse.

CONVEYANCE SECTION

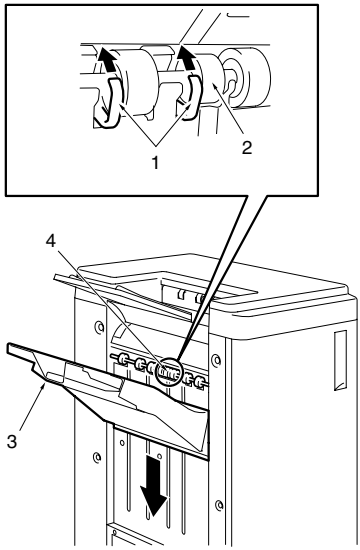
[1] Replacing the Paper Exit Roller (Sponge Roller)

⚠ **Caution**:
After you have lowered the main tray, be sure to unplug the power cord of the main body from the power outlet.

CAUTION: When replacing the sponge rollers, all of the 5 pairs (10 components) must be replaced.

a. Procedure

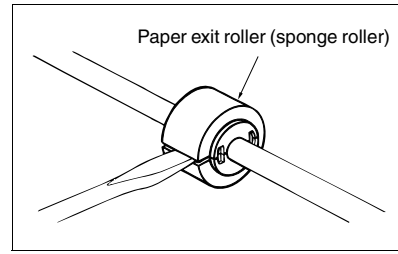
(1) Push up the actuator of the main tray exit with your finger to lower the main tray.



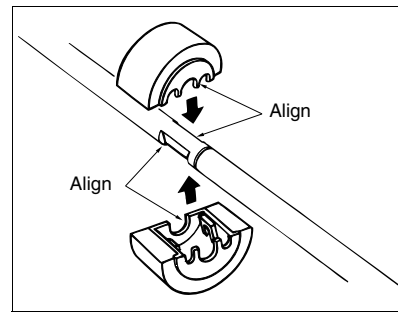
1. Actuator
2. Paper exit roller
3. Main tray
4. Paper exit roller (sponge roller)

(2) Turn the main body's main power switch (SW1) OFF, and unplug the power cord from the power outlet.

(3) Insert the end of the blade screwdriver into the slot in the sponge roller, and twist the screwdriver to pry apart.



(4) Place the two components of a new sponge roller around the roller shaft so that the tabs of the components are aligned with the dents on the shaft. Press the components together firmly until you hear the "click" sound.



(5) To reattach the sponge roller shaft, perform the same procedure in reverse order.

[2] Replacing the Intermediate Conveyance Roller (Sponge Roller)

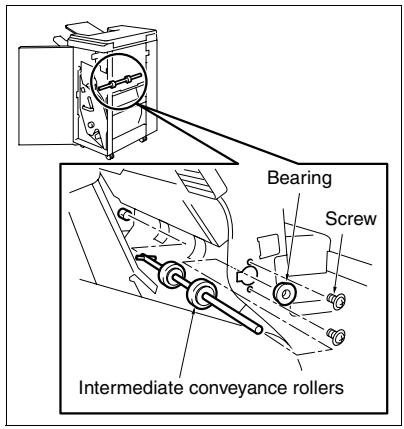
⚠ **Caution**:
Make sure that the power cord of the main tray is unplugged from the power outlet.

CAUTION: When replacing the sponge rollers, all of the 2 pairs (4 components) must be replaced.

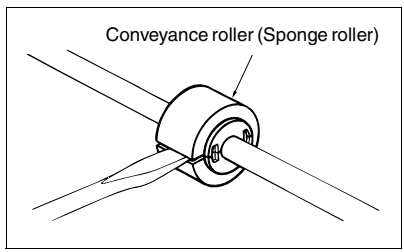
a. Procedure

(1) Open the front door.

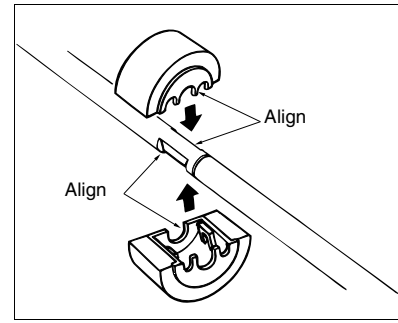
(2) Remove two screws and a bearing, and detach the intermediate conveyance rollers.



(3) Insert the end of the blade screwdriver into the slot in the sponge roller, and twist the screwdriver to pry apart.



(4) Place the two components of a new sponge roller around the roller shaft so that the tabs of the components are aligned with the dents on the shaft. Press the components together firmly until you hear the "click" sound.



(5) To reattach the sponge roller shaft, perform the same procedure in reverse order.

CAUTION: When reinstalling the shaft, make sure that the pin on the far end of the shaft is placed properly in the slot.

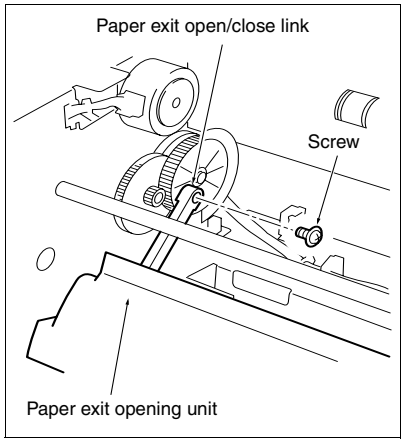
[3] Removing and Reinstalling the Paper Exit Opening Unit

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

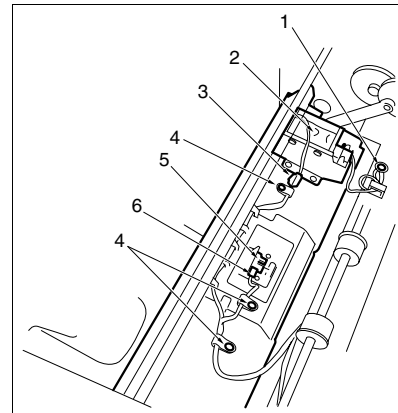
a. Procedure

(1) Remove the following parts:
- Top cover/1 or optional PI (if installed)
- Top cover/2
- Side cover
- Rear cover
- Main tray
- Main paper exit opening cover

(2) Remove a mounting screw on the paper exit open/close link.

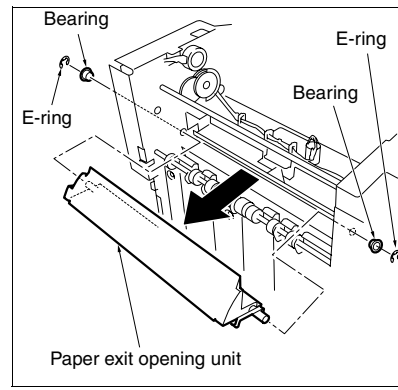


(3) Remove three screws holding the clamps, one screw holding the ground. Also remove the connector (CN110) for the paper exit opening SD (SD704) and the main tray paper exit PS (PS706).



1. Screw holding the ground cable
2. Paper exit opening SD (SD704)
3. Connector(CN110)
4. Screw holding the clamp
5. Main tray paper exit PS (PS706)
6. Connector

(4) Remove the two E-rings and the two shaft holders (at the front and rear side). Remove the paper exit opening unit.



(5) Reinstall the above parts following the removal steps in reverse. Paper exit opening unit

MAIN TRAY SECTION

[1] Replacing the Tray Up/down Motor (M703)

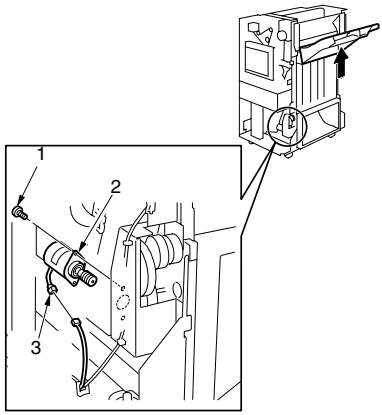
⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
When removing the tray up/down motor, be sure to hold the main tray to prevent it from falling.

a. Procedure

(1) Remove the rear cover.

(2) Remove the connector. Remove two mounting screws while holding the main tray, and then detach the tray up/down motor (M703).



1. Screw
2. Tray up/down motor (M703)
3. Connector (CN160)

(3) Reinstall the above parts following the removal steps in reverse.

[2] Replacing the Up/Down Wire

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
When removing the tray up/down motor, be sure to hold the main tray to prevent it from falling.

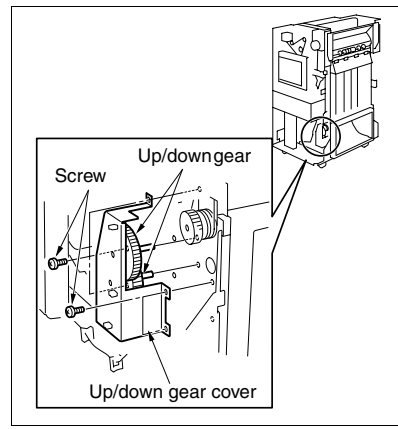
CAUTION1: The wire replacing procedure described below is of the rear side. For the front side, the design as well as the winding direction of the wire is symmetrical.

CAUTION2: "F" is impressed on the front side surface of the wire bracket. Also "R" is impressed on the rear side surface.
Be sure of the direction when installing.

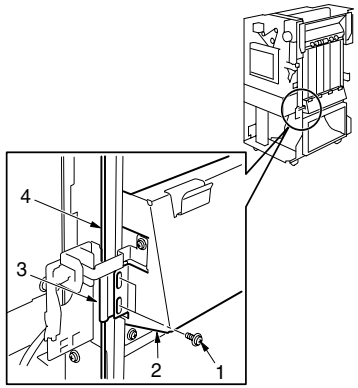
a. Procedure

(1) Remove the following parts:
- Side cover
- Front door
- Rear cover
- Tray up/down motor (M703)
- Main tray

(2) Remove five mounting screws. Remove the up/down gear cover and the gear.

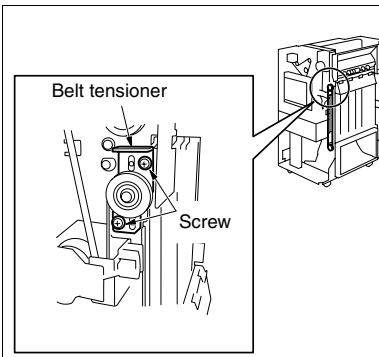


(3) Remove two screws. Detach the wire bracket on the rear from the up/down stay.



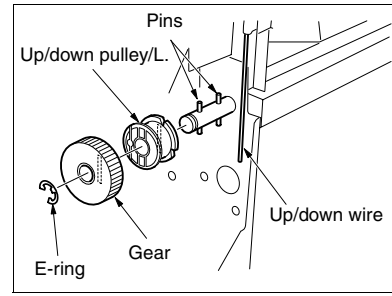
1. Screw
2. Up/down stay
3. Wire bracket
4. Up/down wire

(4) Loosen the two screws on the belt tensioner.



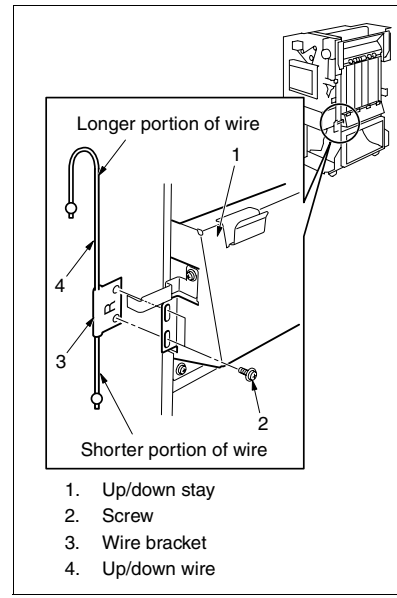
(5) Remove the E-ring and the up/down pulley/L. Then remove the up/down wire.

CAUTION: When you remove the up/down pulley, the pin falls. Be careful not to lose the pin.



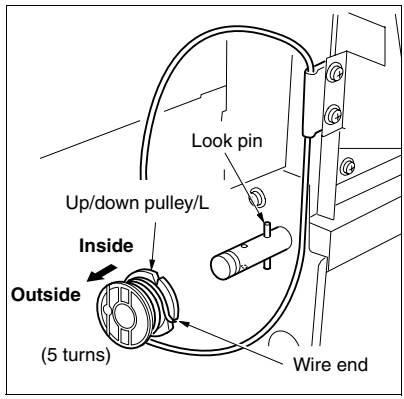
(6) Temporarily attach the wire bracket to the up/down stay with two screws.

CAUTION: The wire bracket must be installed with the longer portion of the wire facing upward.

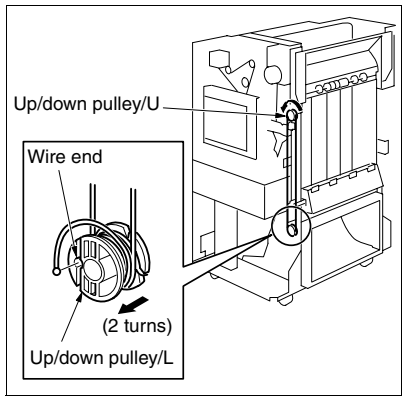


1. Up/down stay
2. Screw
3. Wire bracket
4. Up/down wire

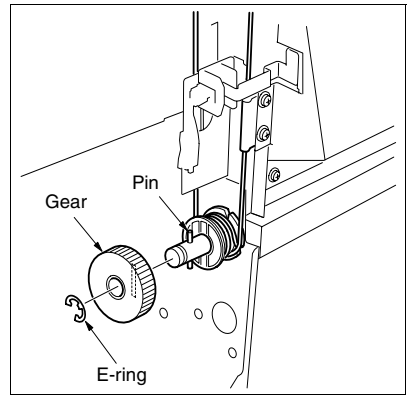
(7) Secure the end of a new up/down wire to the wire end of the up/down pulley/L. Wind the wire tightly around the up/down pulley/L approx. 5 turns from inside to outside. Insert the pulley/L into the shaft so that the slots on the pulley/L align with the lock pin on the shaft.



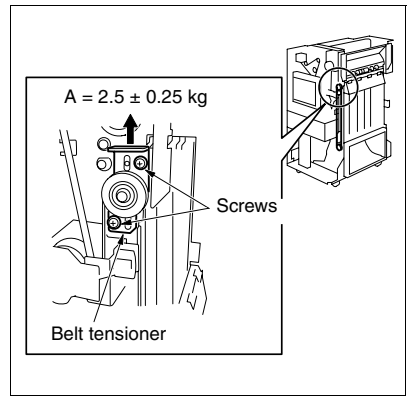
(8) Hook the up/down wire around the up/down pulley/U. Wind the wire tightly around the up/down pulley/L 2 turns from inside to outside. Secure the end of the wire to another wire end (outside) of the up/down pulley/L.



(9) Insert the pin into the hole in the shaft. Put the gear into the shaft and fix the gear with the E-ring.

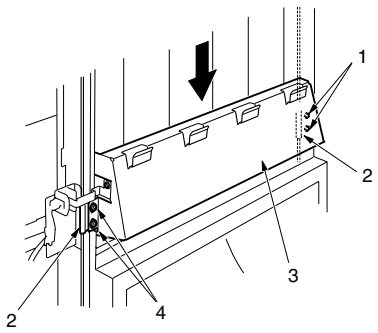


(10) Use a tension gauge or a spring balance to pull the belt tensioner upward at a specified level of force, A, and tighten the securing screws.
Specified force: A = 2.5±0.25 kg



(11) Loosen the two screws securing the front wire bracket. Adjust the height of the front wire bracket to level the up/down stay. Tighten the four mounting screws on the wire brackets (front and rear).

CAUTION: Make sure that the up/down stay is level. If the stay is mounted aslant, an unnecessary load is put on the tray up/down motor (M703) or the gear, which may result in damage to these components.



1. Mounting screws
2. Wire brackets
3. Up/down stay
4. Screws

(12) Reinstall the above parts following the removal steps in reverse.

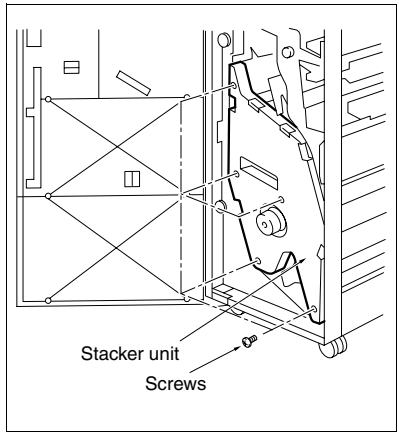
STACKER SECTION

[1] Removing and Reinstalling the Stacker Unit Cover

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

(1) Open the front door.
(2) Remove five screws to detach the stacker unit cover.



(3) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the Stacker Unit

⚠ **Caution**:
We recommend that at least two people perform this service.

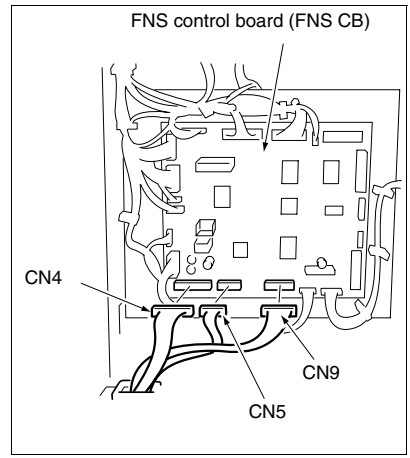
⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
Be careful when detaching the stacker unit. If you remove the stopper, and in succession pull out the stacker unit, the FNS may fall due to the weight of the stacker unit. This may cause injury.

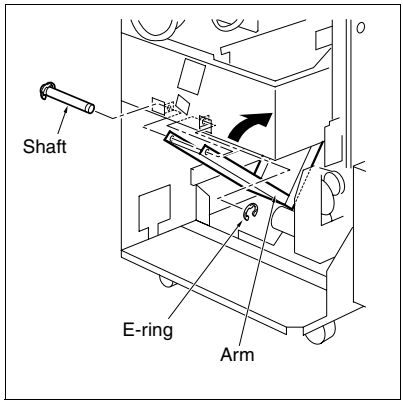
a. Procedure

(1) Remove the following parts:
- Booklet tray
- Side cover
- Front door
- Rear cover

(2) Detach the FNS from the main body.
(3) Pull the handle and draw the stacker unit.
(4) Disconnect the three connectors (CN4, CN5, CN9) from the FNS control board (FNS DCB).

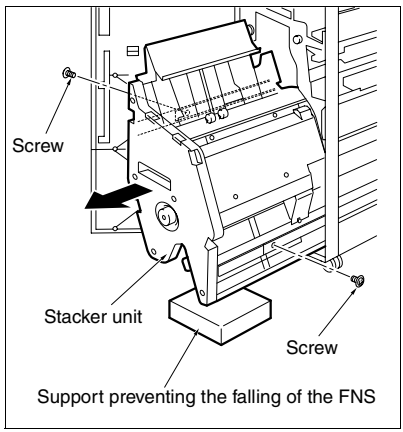


(5) Remove the E-ring to remove the shaft, then fold up the arm and secure it using tape or other materials.



(6) Remove two screws, and further pull stacker unit out.

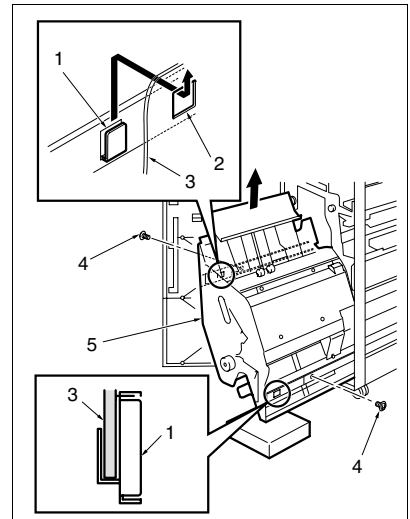
CAUTION: Place something under the drawn stacker unit to prevent the FNS from falling due to the weight of the unit.



(7) Remove two screws. Lift the stacker unit to detach from the guide rail.

⚠ **Caution**:

Take care of your posture when servicing to avoid damage to your back or other joints.



1. Guide rail
2. Mounting hole
3. Unit
4. Screws
5. Stacker unit

(8) Reinstall the above parts following the removal steps in reverse.

CAUTION: Make sure that the hook in the guide rail is inserted into the mounting hole of the stacker unit, and then tighten the securing screw..

STAPLER SECTION

[1] Removing and Reinstalling the Stapler Unit Cover

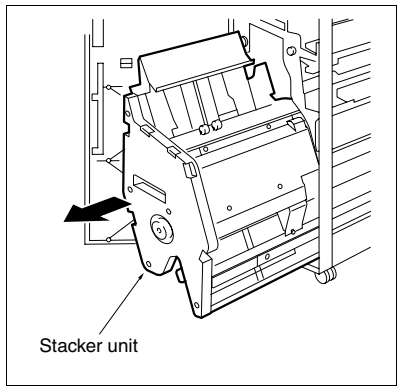
⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
Be careful when you detach the FNS from the main body. If you pull out the stacker unit, the FNS may fall. This may cause injury.

a. Procedure

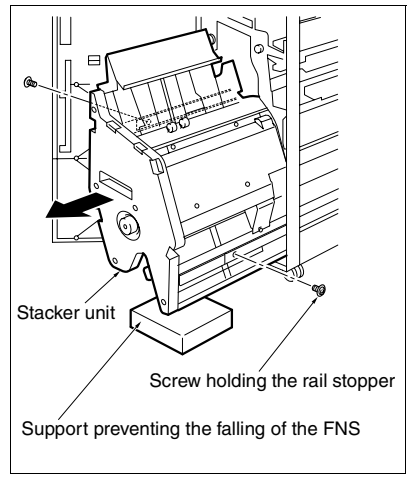
(1) Open the front door.

(2) Draw the stacker unit out.

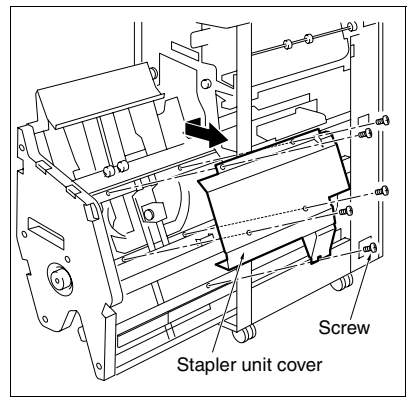


(3) Remove the two screws securing the rail stopper. Further pull the stacker unit out.

CAUTION: Place something under the drawn stacker unit to prevent the FNS from falling due to the weight of the unit.



(4) Remove five screws and detach the cover.



(5) Reinstall the above parts following the removal steps in reverse.

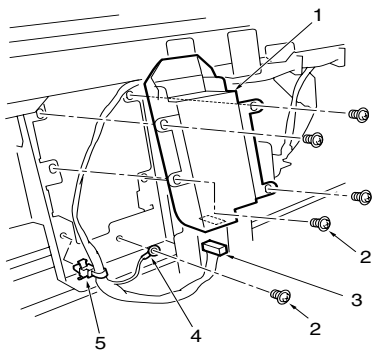
[2] Removing and Reinstalling the Clincher

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
Be sure to perform the adjustment work described in the "FNS Stapler Upper/ Lower Positions Adjustment" of the manual, "Adjustment," after you have attached the clincher.

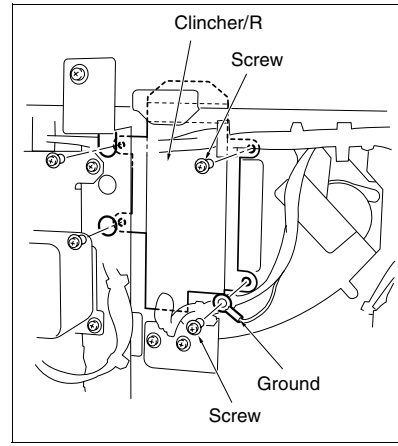
a. Procedure

(1) Open the front door.
(2) Pull the stacker unit out and remove the stapler unit cover.
(3) Remove a mounting screw holding the ground cable. Remove the ground cable and the clamp.
(4) Remove four screws securing the clincher. Detach the clincher/F and the connector.



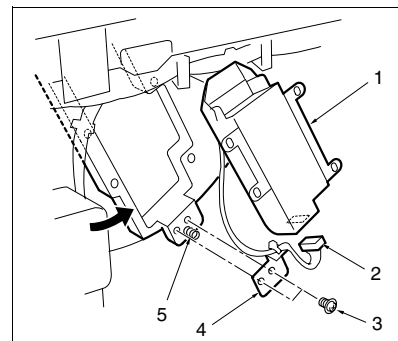
1. Clincher/F
2. Screw
3. Connector
4. Ground
5. Clamp

(5) Remove four mounting screws holding the clincher/R.



(6) Remove two screws. Detach the ball bearing bracket, and then remove the clincher/R by rotating it to the appropriate position. Remove the connector.

CAUTION: Do not lose the bearing spring and the ball.



1. Clincher/R
2. Connector
3. Screw
4. Ball bearing bracket
5. Bearing spring

(7) Reinstall the above parts following the removal steps in reverse.

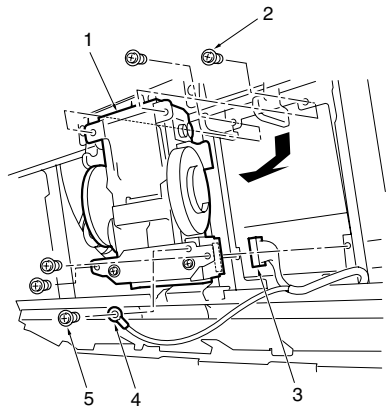
[3] Removing and Reinstalling the Stapler

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

⚠ **Caution**:
Be sure to perform the adjustment work described in the "FNS Stapler Upper/ Lower Positions Adjustment" of the manual, "Adjustment," after you have attached the stapler.

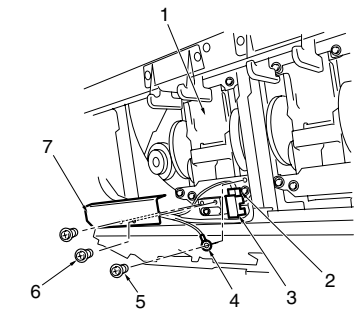
a. Procedure

(1) Open the front door.
(2) Draw the stacker unit out.
(3) Remove the cartridge from the stapler.
(4) Remove four mounting screws securing the stapler and the screw holding the ground cable. Detach the stapler/F and the connector (CN181).



1. Stapler/F
2. Screw
3. Connector (CN181)
4. Ground
5. Screw securing the ground cable

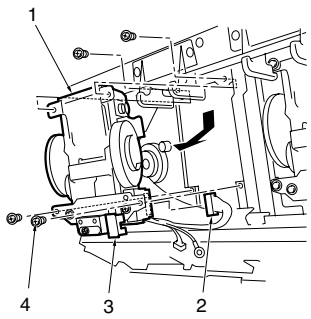
(5) Remove two screws holding the sensor cover of the stapler/R. Remove the screw securing the ground cable. Detach the connector (CN182) of the stapler rotation HP PS (PS713).



1. Stapler/R
2. Connector (CN182)
3. Stapler rotation HP PS (PS713)
4. Ground
5. Screw securing the ground terminal
6. Screw
7. Sensor cover

(6) Remove four screws. Detach the stapler/R and the connector (CN180).

CAUTION: Take care not to damage the stapler rotation HP PS (PS713) when removing the stapler/R.



1. Stapler/R
2. Connector (CN180)
3. Stapler rotation HP PS (PS713)
4. Screw

(7) Reinstall the above parts following the removal steps in reverse.

CAUTION: When installing the sensor cover of the stapler/R, take care that the bundled cable does not disturb the stapler rotation HPPS (PS713) and is not nip by the gears.

EXTERNAL SECTION

[1] Removing / Re-installing the External covers

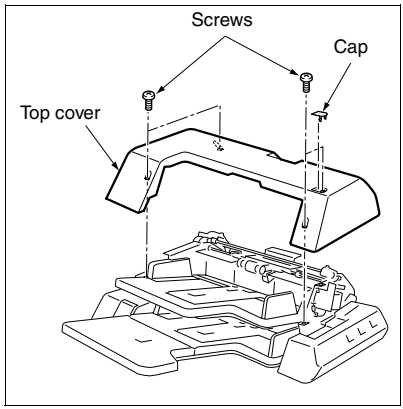
⚠ **Caution**:

Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

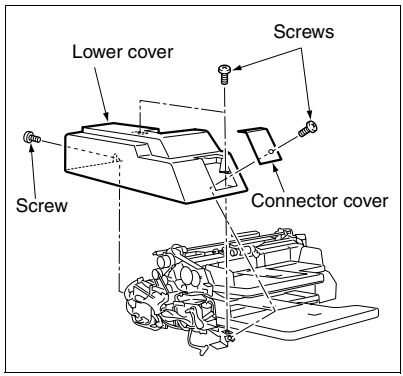
(1) Remove cap on the top cover.

(2) Remove four screws to detach the top cover.

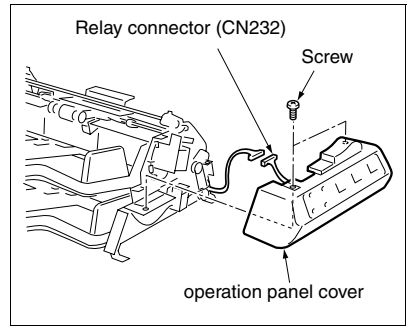


(3) Remove one screw to detach the connector cover.

(4) Remove three screws to detach the lower cover.



(5) Remove two screws, disconnect the relay connector (CN232), and detach the operation panel cover.



(6) Reinstall the above parts following the removal steps in reverse.

PAPER FEED UNIT

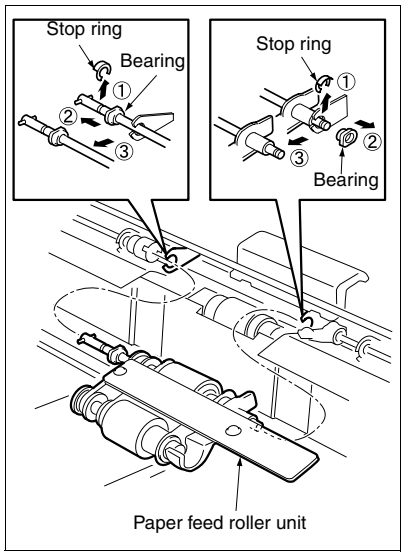
[1] Replacing the Paper feed roller and Feed roller

⚠ **Caution**:
Make sure that the power cord of the main body is unplugged from the power outlet.

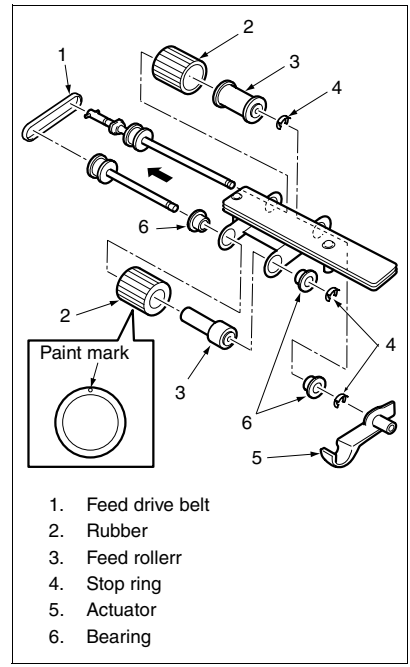
a. Procedure

(1) When replacing the paper feed roller and feed roller for the upper tray, detach the top cover.

(2) Remove the two stop rings, then shift the left and right bearings outside, and remove the feed roller unit.

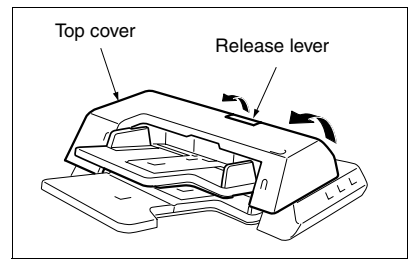


(3) Remove actuator, three stop rings, three bearings of the feed roller unit, then slide the roller shaft in the direction of the allow to remove each roller.



1. Feed drive belt
2. Rubber
3. Feed rollerr
4. Stop ring
5. Actuator
6. Bearing

(4) When replacing the paper feed roller and feed roller for the lower tray, open the upper tray and perform the steps 2 and 3.



(5) Reinstall the above parts following the removal steps in reverse.

Caution: Ensure that the mounting direction of each roller and rubber is correct.

[2] Replacing the Double feed prevent roller and Torque limiter

⚠ **Caution**:

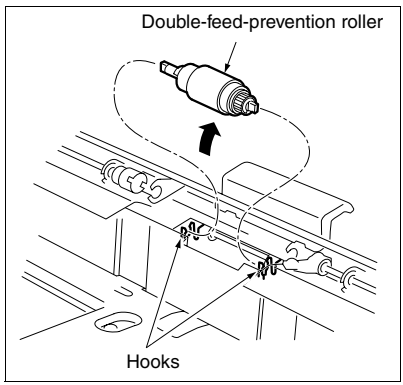
Make sure that the power cord of the main body is unplugged from the power outlet.

a. Procedure

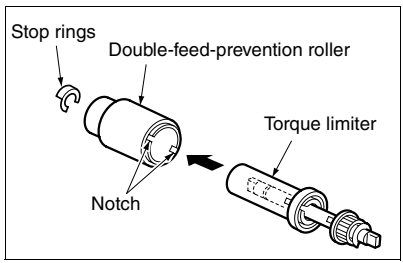
(1) When replacing the double feed prevent roller and the torque limiter for the upper tray, detach the top cover.

(2) Detach the paper feed roller unit.

(3) Release the hooks on both sides, remove the double feed prevention roller assembly by lifting up, then pull out the shaft, and remove the double feed prevention roller together with the feed-reverse gear.



(4) Separate the double feed prevention roller and the torque limiter from the double feed prevention roller assembly.



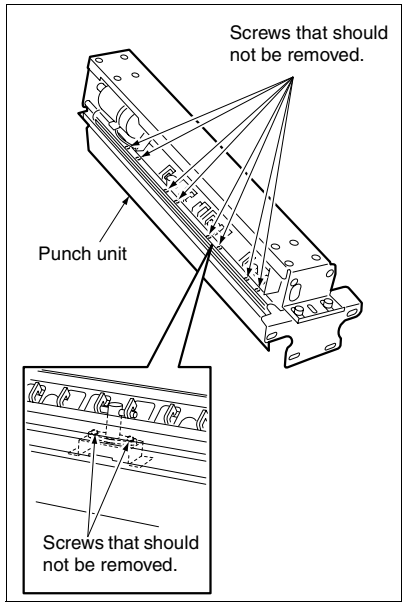
(5) When replacing the double feed prevention roller and the torque limiter for the lower tray, open the upper unit and perform the steps 2 and 3.

(6) Reinstall the above parts following the removal steps in reverse.

Caution: Ensure that the mounting direction of each roller and rubber is correct.

PUNCH SECTION

Caution: The following screws should not be removed. If you do, punching cannot be done as designed.

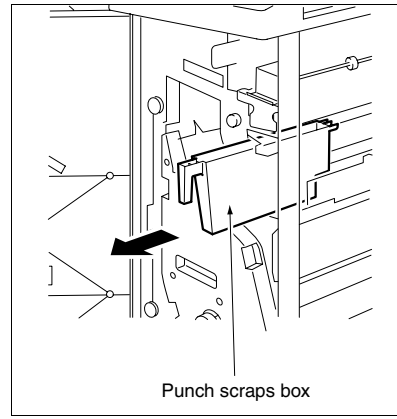


[1] Replacing the Punch unit

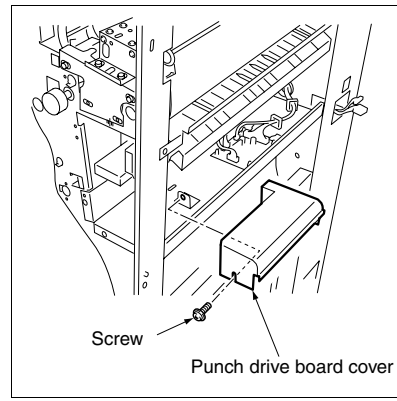
⚠ **Caution: Be sure to unplug the power cords of the main body and this machine from the wall outlet.**

a. Procedure

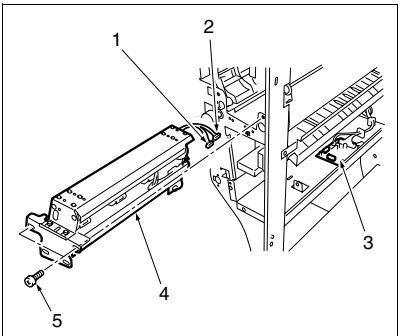
(1) Remove the punch scraps box.



(2) Remove the drive board cover by removing one screw.



(3) Disconnect two connectors (CN65, CN66) connecting the punch unit from the PK drive board.



1. Connector (CN66)
2. Connector (CN65)
3. Punch drive board (PKDB)
4. Punch unit
5. Screw

(4) Remove the punch unit from FNS by removing two screws.

(5) Reinstall the above parts following the removal steps in reverse.
Punch unit
Screws that should not be removed
Screws that should not be removed

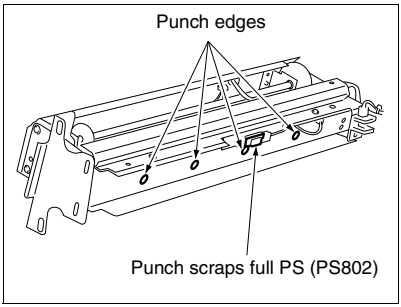
[2] Cleaning the Punch Edges and Punch Scraps Full PS (PS802)

⚠Caution: Be sure to unplug the power cords of the main body and this machine from the wall outlet.

a. Procedure

(1) Remove the punch unit.

(2) Use a blower brush to remove paper dust and punch scraps from the punch edges and punch scraps full PS (PS802).



(3) Reinstall the above parts following the removal steps in reverse.

2

ADJUSTMENT

HOW TO USE THIS SECTION

[1] Scope and Precautions

This section provides detailed information about adjustment items and procedures. Before addressing customer complaints, perform the following checks.

1. Check whether the power supply voltage meets the specifications.
2. Check whether the power supply is properly grounded.
3. Check whether this machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that produce electrical noise).
4. Check whether the installation environment is good.
   a. High temperature / High humidity, direct sunlight, ventilation, etc.
   b. Level of installed location
5. Check whether original has a problem that may cause defective images.
6. Check whether the selected density value is correct.
7. Check whether the platen glass, slit glass, etc. is soiled.
8. Check whether correct paper is used for copying.
9. Check whether copying materials and parts (e.g., developer, drum, and cleaning blade) are replenished and replaced when they reach the end of their useful life.
10. Check whether toner remains.

When servicing the machine, observe the following precautions:

11. Only either side of the AC line is shut off when the SW1 (main power) of this machine is turned off. Always unplug the power cord before starting service work. If it is necessary to service the machine with the power on, take care not to be caught in the scanning gear of the exposure unit.
12. Special care should be taken when handling the fixing unit because it operates at extremely high temperatures.
13. The developing unit has a strong magnetic field. Keep watches and measuring equipment away from it.
14. Take care not to damage the drum with tools and so on.
15. Do not touch IC pins with bare hands.

ADJUSTMENTS MADE WHEN REPLACING PARTS

Adjustments (including checks) and settings are not only required when a customer complaint about the copy image quality is received, but also after replacing or reassembling parts.

[1] How to Read Tables

Components of the tables used in this section are as follows:

1. Mode
Adjustment mode to be selected.
[P]: P mode
[25]: 25 mode
[36]: 36 mode
[47]: 47 mode

2. Code
Code and copy quantity setting button used in each mode.

3. Page
Page in the "ADJUSTMENT" section.

4. Circled numbers
① ② Indicate that adjustments (including checks) must be made in order of precedence.
◯ (Circle without numeric character):
Indicates that adjustments (including checks) can be made independently.

LIST OF ADJUSTMENT ITEMS

Item No.	Classification by Adjustment		Adjustment Item	Mode	Page	Drum	Developer	Write unit	Dust-proof glass	Each tray unit	By-pass paper feed unit	Tray up/down wire	Registration roller	Registration unit	Registration clutch	Mis-centering detection sensor	ADU unit	Read unit	Fixing unit	Memory board	RADF unit	LCT	Finisher	Stapler unit	Cover sheet feeder	Puncher
1	Process Adjustment	High voltage adjustment	Charging grid manual adjustment	36	1-48	①														O						
2		Drum Peculiarity Adjustment	Blade setting mode		1-49	③														O						
3			Auto maximum density adjustment		1-49	④	②	②	②											O						
4			Auto dot diameter adjustment		1-50	⑤	③	①	①											O						
5			LD1 offset adjustment		1-51	⑥	④													O						
6			LD2 offset adjustment		1-52	⑦	⑤													O						
7			Auto gamma adjustment (1dot)		1-53	⑧	⑥	③	③											O						
8			Auto gamma adjustment (2dot)		1-54	⑨	⑦	④	④											O						
9			Cartridge set mode		1-54	②	①													O						
10	Image Adjustment	Tray Adjustment			1-56					O	O									O						
11		Magnification Adjustment	Printer vertical magnification adjustment		1-57								O	O						O						
12			Printer horizontal magnification adjustment		1-58			O												O						
13			Scanner (platen) vertical adjustment		1-58													O		O						
14			Scanner (RADF) vertical adjustment		1-59													O		O	O					
15		Timing Adjustment	Printer leading edge timing adjustment		1-61			O					O	O	O					O						
16			Printer registration loop adjustment		1-61															O						
17			Printer pre-registration adjustment		1-62															O						
18			Printer leading edge timing adjustment		1-62															O						
19			Scanner (platen) leading edge timing adjustment		1-63													O		O						
20			Scanner (RADF) leading edge timing adjustment		1-63													O		O	O					
21			Scanner (RADF) registration loop adjustment		1-64															O						
22		RADF Adjustment	RADF density adjustment		1-65													O		O	O					
23			RADF original size adjustment		1-65															O						
24			RADF incline offset adjustment		1-66															O	O					
25		Centering Adjustment	Printer centering adjustment		1-67				O							O				O						
26			Scanner (platen) centering adjustment		1-67														O	O	O					
27			Scanner (RADF) centering adjustment		1-68													O		O	O					
28		Warp Adjustment (Copier)	Scanner (platen) warp (main scan)		1-68															O						
29			Scanner (platen) warp (sub-scan)		1-68															O						
30			Scanner (RADF) warp (main scan)		1-68															O						
31			Scanner (RADF) warp (sub-scan)		1-68															O						
32	Finisher Adjustment	Stitch and fold stopper adjustment			1-79															O			O			
33		Folding stopper adjustment			1-79															O			O			
34		Cover sheet tray size adjustment			1-80															O					O	

Item No.	Classification by Adjustment		Adjustment Item	Mode	Page	Drum	Developer	Write unit	Dust-proof glass	Each tray unit	By-pass paper feed unit	Tray up/down wire	Registration roller	Registration unit	Registration clutch	Mis-centering detection sensor	ADU unit	Read unit	Fixing unit	Memory board	RADF unit	LCT	Finisher	Stapler unit	Cover sheet feeder	Puncher
35	Finisher Adjustment	Punch Adjustment	Punch side-position adjustment	36	1-81															O						O
36			Punch registration loop adjustment		1-81															O						O
37		Three-holding adjustment			1-82															O			O			
38	Tray Centering Adjustment				1-97					O												O				
39	Load Adjustment for LCT Paper Feed Roller				1-100																	O				
40	Paper up/down Plate Horizontal Adjustment				1-101																	O				
41	Skew Adjustment				1-103																	O				
42	Tray Spring pressure adjustment				1-104					O												O			O	
43	Paper Feed Height (upper limit) Adjustment				1-106																	O				
44	Pick-up Release Amount Adjustment				1-107																	O				
45	RADF Mounting Position Adjustment				1-108																O					
46	RADF Skew Adjustment				1-109																O					
47	RADF Paper Skew Adjustment		Face side of original paper skew		1-110																O					
48			Back side of original paper skew		1-111																O					
49	FNS Adjusting the Magnets on Conveyance Guide Plate C			Other Adjustments	1-112																		O			
50	FNS Adjusting the By-pass Gate				1-113																		O			
51	FNS Adjusting the Shift Position				1-115																		O			
52	FNS Adjusting the Paper Exit-Opening Solenoid				1-116																		O			
53	FNS Adjusting the Mount Location of the Paper Exit Arm				1-117																		O			
54	FNS Adjusting the Mount Location of the Upper Alignment Plates				1-118																			①		
55	FNS Adjusting the Mount Location of the Lower Alignment Plates (FN-6 only)				1-119																			②		
56	FNS Adjusting the Stapling Position (flat Stapling)				1-120																			O		
57	FNS Adjusting the Stapler Vertical Positioning				1-121																			O		
58	FNS Adjusting the Stapling Position (stitch and fold)				1-123																			③		
59	FNS Adjusting the Angle of the Folding Stopper				1-124																		①			
60	FNS Adjusting the Folding Force				1-125																		O			
61	FNS Adjusting the three-holding Position				1-126																		②			
62	PI Centering adjustment				1-129																					③
63	PK Adjusting the Skew of Punched Holes Position				1-127																					①
64	PK Adjusting the Vertical Positioning of Punched Holes				1-128																					②
65	Drum Count Reset				1-38	O																				
66	Developer Count Reset			25	1-38		O																			
67	Web Counter Reset				1-38														O							

Caution: Replacing the image control board

- When a damaged image control board is replaced, the memory board on this board must be used on the new image control board.
  Only when the memory board is damaged, use a new memory board on a new control board.
  Since the new memory board does not have adjustment data, the all adjustments are required. Before making the all adjustments, make the "47mode-92(output)" setting to make the new memory board effective.
- After making any adjustment, make the "47mode -96 (output) setting". After made the "47mode-96 (output)" setting, the adjustment data is saved.
- However, the "47mode-92" and -96" settings are protected to prevent them from careless operation. In order to make "47mode -92" and -96" settings using the saved adjustment data, the protection must be disabled. For the unprotection method, contact the service manager ot the authorized distributor.

LCD ADJUSTMENT

[1] LCD Control Panel Adjustment

Enter the key operator mode and select " 10 Touch panel adjustment" to adjust the LCD touch panel.

*If you cannot select the touch panel adjustment mode pressing any numeric key after entering key operator mode will take you directly to " 10 Touch panel adjustment".

[2] LCD Panel Contrast/Key Sound Adjustment

Enter the key operation mode and select " 7 LCD Panel contrast/Key sound adjustment" to adjust the contrast, backlight, and/or buzzer as desired.

SETTINGS AND ADJUSTMENTS MADE WITH THE P FUNCTION

The P function allows you to perform following numerical value checks using the P button:

1. Total counter
2. Copier counter
3. Printer counter
4. * PM counter
5. Density Shift (Auto <Text/Photo>)
6. Density Shift (Inclease Contrust)
7. Density Shift (Photo)
8. Density Shift (Text)

* PM counter is only displayed when ! Check key is pressed on the operation panel.

[1] Checking and Printing the P Function

1. Turn ON the SW2 (sub power).
2. Press the P button.
3. Counter list is displayed.
4. Press the COUNTER MENU key.
5. Press the START button to print out the counter list. The P function is cancelled automatically.
6. If the counter list need not be displayed, press the EXIT key.

[2] Setting up the P Function

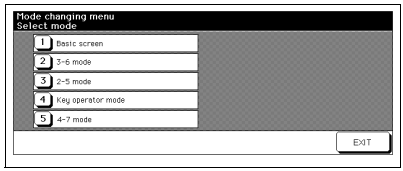
1. Turn ON the SW2 (sub power).
2. Press the SPECIAL ORIGINAL
3. Select the required image quality, text, photo etc. Then press the P button to set the desired density shift.
4. Enter a value (0-5) with a numeric key, then press the OK key. The smaller the value, the darker the density.
5. Press the OK key to return to the Basic screen.

MODE CHANGING MENU

[1] Mode Selection

You can select a mode from the following [Mode changing menu: [Select mode] without turning OFF and ON the power switch.

1. Basic screen
2. 3-6 mode
3. 2-5 mode
4. Key operation mode
5. 4-7 mode



Step	Operation
1	Turn on the SW2 (sub power).
2	Press P button and wait until **[Enter password for mode selection]** message appears.
3	Enter the password 9272 and press the Start button.(Note that this password is fixed and cannot be changed.)The [Mode changing menu] appears.
4	Enter the number to select the desired mode.
5	To return to the **[Mode changing menu]**, press P button and wait until the menu appears again.
6	Upon completion of the adjustment, press EXIT key to return to the Basic screen.

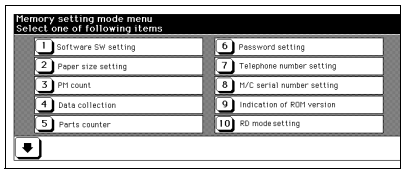
25 MODE

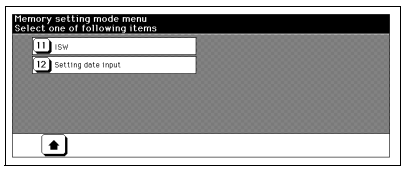
[1] Setting the 25 Mode

This machine has an adjustment mode called the "25 Mode". Select this mode to rewrite data in the non-volatile memory or make various settings.

1. Turn OFF the SW2 (sub power).
2. While pressing the copy quantity setting button 2 and 5, turn ON the SW2 (sub power).
   The Memory setting mode menu Screen will appear.
   Now the machine is in the 25 mode, disabling normal copy operations.

[Memory setting mode menu Screen]





3. Press the numeric button of the desired setting item.
   The associated setting screen will appear.
4. Enter data in the setting screen.
5. Turning OFF the SW2 (sub power) cancels the 25 mode.
6. New data will take effect after restart.

[2] List of Adjustment Items for 25 Mode

Adjustment Item Menu				Remarks
1	Software DIP SW setting			See "list of Software DIP Switches".
2	Paper size setting			
3	PM count	Resetting PM Count		
		Setting PM cycle		
4	Data collection	1	Total count of each paper size	
		2	Copy count of each paper size	
		3	Print count of each paper size	
		4	RADF count	
		5	Black ratio of each section	
		6	Black ratio ranking list	
		7	JAM data of time series	
		8	JAM count	
		9	Count of each copy mode	
		10	SC count	
		11	JAM count of each section	
		12	SC count of each section	
5	Parts counter	1	Count of special parts	COUNT RESET
		2	Count of each part	COUNT RESET Part name setting P/N setting Limit Setting
6	Password setting	Key Operator password		4 digits
		EKC master key code		8 digits
		Weekly timer password		4 digits
		HDD management password		4 digits
7	Telephone/Fax number setting	Customer support telephone number		16 digits
		Customer support FAX number		16 digits
8	M/C serial number setting	Main body		
		Optional tray		
		Finisher		
9	Indication of ROM version			Indication of versions of ROMs installed in the image control, printer control, finisher, and Z-fold.
10	RD-moed setting			
11	ISW updating			
12	Setting date input			

[3] Setting Software DIP Switches

1. Procedure

Bring up the Software DIP SW Setting screen and set software DIP switches.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 1 Software DIP SW setting".
3	**[Software DIP SW setting screen]** Select a DIP switch number. Use the ▲ or ▼ key or numeric keys. To use numeric keys, press the DIP switch number key at the left before entering a DIP switch number.
4	Select a bit number of the selected DIP switch. Use the ▲ or ▼ key or numeric keys. To use numeric keys, press the bit number key at the upper center before entering a DIP switch number.
5	Select ON (=1), or OFF (=0) of the switch. Use the ON or OFF key. ON : Sets 1. OFF : Sets 0.
6	Press the RETURN key to return to the Memory setting mode menu Screen.

For the function of each switch, refer to “list of Software DIP Switches”.

< List of Software Switches >

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW 1	0	Condition for stopping copying after indication of toner supply	* 1	* 1	1	1	1
	1				0	0	0
	2	Method for stopping copying after indication of toner supply	* 2	* 2	1	1	1
	3				0	0	0
	4	Inhibition of copying when PM count is reached	Disabled	Inhibited	0	0	0
	5	Number of copies made before inhibition of copying when PM count is reached	* 3	* 3	0	0	0
	6				0	0	0
	7				0	0	0
DIPSW2	0	Hard disk connection	Disconnected	Connected	0	0	0
	1	Electrode cleaning cycle (when power is turned ON, fixing temperature is 50ºC or less)	* 4	* 4	0	0	0
	2				0	0	0
	3				0	0	0
	4	Electrode cleaning cycle (after power is turned ON)	* 5	* 5	0	0	0
	5				0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0
DIPSW3	0	-	-	-	0	0	0
	1	SC latch	Unlatched	Latched	0	0	0
	2	25, 36, 47 mode password request (password: 9272)	Not requested	Requested	0	0	0
	3	Charger cleaning function	ON	OFF	0	0	0
	4	Transfer/separation cleaning function	ON	OFF	0	0	0
	5	-	-	-	0	0	0
	6	47 mode 15-01 data collection clearing	Disabled	Enabled	0	0	0
	7	-	-	-	0	0	0
DIPSW4	0	ADF automatic skew adjustment	Enabled	Disabled	0	0	0
	1	Inhibition of postcard double sided copy	Disabled	Enabled	0	0	0
	2	Destination selection	* 6	* 6	0	1	0
	3				0	0	1
	4	Key counter removal recovery	Disabled	Enabled	0	0	0
	5	Inhibition of magnified APS	Enabled	Disabled	0	1	0
	6	Fixed magnification rate setting change in key operator mode	Enabled	Disabled	1	0	0
	7	A3 (11x17) counting method	Incremented by 1	Incremented by 2	0	0	0
DIPSW5	0	Image density selection (Toner concentration threshold)	* 7	* 7	0	0	0
	1				0	0	0
	2	Image density selection (laser PWM)	* 8	* 8	1	1	1
	3				0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0
DIPSW 6	0	Transfer/separation output for plain paper	* 9	* 9	0	0	0
	1				0	0	0
	2				0	0	0
	3	Transfer/separation output for thick paper	* 10	* 10	0	0	0
	4				0	0	0
	5	Transfer/separation output for thin paper	* 11	* 11	0	0	0
	6				0	0	0
	7	-	-	-	0	0	0

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW 7	0	Toner guide roller current correction	* 12	* 12	0	0	0
	1				0	0	0
	2	-	-	-	0	0	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	Transfer/separation output for recycled paper	* 13	* 13	0	0	0
	6				0	0	0
	7				0	0	0
DIPSW8	0	-	-	-	0	0	0
	1	-	-	-	0	0	0
	2	Fixing roller initial rotation	* 14	* 14	0	0	0
	3				1	1	1
	4	Fixing roller initial rotation time setting	* 15	* 15	0	1	1
	5				0	0	0
	6	A3(11 × 17) PM counter switch	1 count	2 count	0	0	0
	7	Store on hard disk	Enable	Disable	0	0	0
DIPSW 9	0	Operation at key counter removal (copy)	Same as stop key	Immediate stop (JAM)	0	0	0
	1	Operation at key counter removal (IP-511)	Ignored	Same as DIPSW9-0	0	0	0
	2	Message switching	* 16	* 16	0	0	0
	3				0	0	0
	4	Copy count limit	* 17	* 17	0	0	0
	5				0	0	0
	6				0	0	0
	7				0	0	0
DIPSW10	0	Page memory allocation when powered.	* 18	* 18	0	0	0
	1				0	0	0
	2	Page memory allocation when job starts	* 19	* 19	0	0	0
	3	-	-	-	0	0	0
	4	Transfer/separation output for high-quality paper	* 20	* 20	0	0	0
	5				0	0	0
	6				0	0	0
	7				0	0	0
DIPSW11	0	-	-	-	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	SC/E code screen switchover	Switched	Not switched (All are F codes)	0	0	0
	4	Selection of filter for jagged edges on slanting lines	Not selected	Selected	0	0	0
	5	Tone switchover in photo mode	2bitED-2dot PWM	1bitED-2dot PWM	0	0	0
	6	-	-	-	0	0	0
	7	JAM indication screen type	Without Jam code	With Jam code	0	0	0
DIPSW 12	0	Black stripe creation interval	Every 10 copies	Every 50 copies	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	Printer automatic centering correction	Enable	Disable	0	0	0
	4	High voltage output in 36/47 mode	Not output	Output	1	1	1
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW 13	0	Size detection 1	A5	5.5 x 8.5	0	1	0
	1	Size detection 2	A4R	8.5 x 11R	0	1	0
	2	Size detection 3	8.5 x 14	F4	0	0	1
	3	Size detection 4	* 21	* 21	0	0	0
	4				0	1	0
	5	F4 size detection	* 22	* 22	0	0	0
	6				0	0	0
	7	-	-	-	0	0	0
DIPSW14	0	Size detection 5 (main body)	B4 : 11 x 17/ B5 : 8.5 x 11/B5R	8K/16K/16KR	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	Size detection 5 (by-pass feed)	B4 : 11 x 17/ B5 : 8.5 x 11/B5R	8K/16K/16KR	0	0	0
	4	Size detection 5 (platen)	B4 : 11 x 17/ B5 : 8.5 x 11/B5R	8K/16K/16KR	0	0	0
	5	Size detection 5 (ADF)	B4 : 11 x 17/ B5 : 8.5 x 11/B5R	8K/16K/16KR	0	0	0
	6	Size detection 5 (PI)	B4 : 11 x 17/ B5 : 8.5 x 11/B5R	8K/16K/16KR	0	0	0
	7	-	-	-	0	0	0
DIPSW15	0	-	-	-	0	0	0
	1	Maximum number of sheets to an be stapled	* 23	* 23	0	0	0
	2				0	0	0
	3	FNS alarm stop SW	* 24	* 24	0	0	0
	4				0	0	0
	5	RD mode connection recognition	Disconnect	Connect	0	0	0
	6	Dmax. value in printer mode	1.43	1.35	0	0	0
	7	-	-	-	0	0	0
DIPSW16	0	-	-	-	0	0	0
	1	Multi-job	Reservation enabled	Reservation disabled	0	0	0
	2	-	-	-	0	0	0
	3	C(K) counting in printer mode	Counted	Not counted	0	0	0
	4	TC start date indication (P mode)	Indicated	Not indicated	0	0	0
	5	-	-	-	0	0	0
	6	Non-original area automatic erasure mode judgement level	* 25	* 25	0	0	0
	7				0	0	0
DIPSW17	0	Weekly timer summer time setting	* 26	* 26	0	0	0
	1				1	1	1
	2				1	1	1
	3				0	0	0
	4	Density selection for scanning tab paper	* 27	* 27	0	0	0
	5				0	0	0
	6				0	0	0
	7	-	-	-	0	0	0
DIPSW18	0	Tray 1's faulty part isolation	Normal	Unavailable	0	0	0
	1	Tray 2's faulty part isolation	Normal	Unavailable	0	0	0
	2	Tray 3's faulty part isolation	Normal	Unavailable	0	0	0
	3	LCT faulty part isolation	Normal	Unavailable	0	0	0
	4	ADF faulty part isolation	Normal	Unavailable	0	0	0
	5	Folding, stapling and three-holding faulty part isolation	Normal	Unavailable	0	0	0
	6	PI faulty part isolation	Normal	Unavailable	0	0	0
	7	HDD faulty part isolation	Normal	Unavailable	0	0	0

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW 19	0	-	-	-	0	0	0
	1	Fixing temperature setting switch over	* 28	* 28	0	0	0
	2				0	0	0
	3				0	0	0
	4	-	-	-	0	0	0
	5	PK faulty part isolation	Normal	Unavailable	0	0	0
	6	IP scanner default resolution	* 29	* 29	0	0	0
	7				0	0	0
DIPSW20	0	Group stapling	Disabled	Enabled	0	0	0
	1	Original size scanning with shift function (Note1)	Normal	Original priority	0	0	0
	2	Stamp page number switching	Based on original	Based on transfer paper	0	0	0
	3	Keyboard layout	ABC layout	QWERTY layout	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	Tandem connection	Disconnected	Connected	0	0	0
DIPSW21	0	Mixed sized print stapling inhibition (IP-511)	Enabled (real-time output)	Disabled (batch processing)	0	0	0
	1	LCT size setting in key operator mode	Disabled	Enabled	0	0	0
	2	Original count display	Displayed	Not displayed	0	0	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	Special paper APS response	Disabled	Enabled (except thick paper)	0	0	0
	7	-	-	-	0	0	0
DIPSW22	0	IP address setting	Inhibited	Allowed	1	1	1
	1	Number of punched holes	* 30	* 30	0	1	0
	2				0	0	1
	3	Image reference position of unspecified size of paper	-	-	0	0	0
	4	Power save button function	Enabled	Disabled	0	0	0
	5	-	-	-	0	0	0
	6	FNS no staple operation	Staple supply requested	Request for staple supply and stapling canceled	0	0	0
	7	-	-	-	0	0	0

Note1: When "Normal" is selected, the original size is compared with the copy paper size and the smaller one is assumed to be the image area size. When "Original priority" is selected, the original size is compared assumed to be the image area size only when the image shift mode is selected.

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW23	0	-	-	-	0	0	0
	1	Operation when printer EKC password is not matched	Counted and output to EKC or other user domain	Not output (display it on the JOB list that is not produced)	0	0	0
	2	Image density selection (toner density selection of developer)	* 31	* 31	0	0	0
	3				0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	Registration of by-pass special paper setting for JOB memory	Prohibited	Allowed	0	0	0
	7	-	-	-	0	0	0
DIPSW24	0	Method of accessing Hard disk JOB	Password	Password + file name	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0

DIPSW No.	Bit	Function	0	1	Initial Value		
					Japan	Inch	Metric
DIPSW27	0	-	-	-	0	0	0
	1	-	-	-	0	0	1
	2	-	-	-	0	1	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0
DIPSW28	0	-	-	-	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	Limitation of punch function	Selected	Not selected	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0
DIPSW29	0	-	-	-	0	0	0
	1	-	-	-	0	0	0
	2	-	-	-	0	0	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	-	-	-	0	0	0
DIPSW30	0	-	-	-	0	0	0
	1	25 mode collection data 7-12 for checking	Display restriction	No display restriction	0	0	0
	2	-	-	-	0	0	0
	3	-	-	-	0	0	0
	4	-	-	-	0	0	0
	5	-	-	-	0	0	0
	6	-	-	-	0	0	0
	7	Passwords to save/access hard disk JOB	Not displayed	Displayed	0	0	0

*1 Condition for stopping copying after indication of toner supply request

Mode	1-1	1-0
Stops after printing 1,500 copies	0	0
Stops after printing 3,000 copies	0	1
Stops after printing 4,000 copies	1	0
Stops after printing 5,000 copies	1	1

*2 Method for stopping copying after indication of toner supply request

Mode	1-3	1-2
Stops after ejecting the paper remaining in the machine	0	0
Stops after printing specified number of copies	0	1
Stops at the end of the current job	1	0
Does not stop	1	1

*3 Number of copies made before inhibition of copying when PM count is reached

Mode	1-7	1-6	1-5
1,000 copies	0	0	0
2,000 copies	0	0	1
3,000 copies	0	1	0
4,000 copies	0	1	1
5,000 copies	1	0	0
1,000 copies	1	0	1
1,000 copies	1	1	0
1,000 copies	1	1	1

*4 Electrode cleaning cycle (fixing temperature is 50°C or lower when power is turned ON)

Mode	2-3	2-2	2-1
When power is tured ON	0	0	0
5,000 copies	0	0	1
10,000 copies	0	1	0
15,000 copies	0	1	1
20,000 copies	1	0	0
25,000 copies	1	0	1
30,000 copies	1	1	0
Not cleaned	1	1	1

*5 Electrode cleaning cycle (after power is turned ON)

Mode	2-5	2-4
10,000 copies	0	0
20,000 copies	0	1
30,000 copies	1	0
40,000 copies	1	1

*6 Destination switchover

Mode	4-3	4-2
Japan	0	0
Inch area	0	1
Metric area	1	0

*7 Image density selection
(toner concentration threshold)
These bits set the read level of the toner concentration patch formed on the drum to determine the toner concentration. Against image excessive density, image blur, and toner scattering in all tone areas, the setting should be made by shifting the threshold of black color to the positive side.
Against insufficient density in all tone areas, shift to the negative side.

- Standard -10:The image becomes darker.
- Standard +10:The image becomes lighter.
- Standard +20:The image becomes far lighter.

Mode	5-1	5-0
Standard	0	0
Standard -10	0	1
Standard +10	1	0
Standard +20	1	1

Note: There are three DIP switches to change the image density : 5-0/1 (toner concentration threshold, 5- 2/3 (laser PWM), and 23-2/3 (toner density of developer).
The priority of order of these adjustments are as follows :
(1) Laser PWM
(2) Toner density of developer
(3) Toner concentration threshold

*8 Image density selection
These bits set image write laser PWM. Against exessive density of 100% black color, thick letters and lines, and excessive toner consumption, the setting should be made by selecting “light.” In the opposite case, select “dark.”

Mode	5-3	5-2
Darker (255)	0	0
Normal (235)	0	1
Lighter (215)	1	0

Note: There are three DIP switches to change the image density :
5-0/1(toner concentration threshold),
5-2/3 (laser PWM), and 23-2/3 (toner density of developer). The priority of order of these adjustments are as follows:
(1) Laser PWM
(2) Toner density of developer
(3) Toner concentration threshold

*9 Transfer/separation output for plain paper
These bits are used when "- - - -", "Normal", "Color", "Special" or "Seal" is selected for "Paper type/special size setting" in the key operator mode.
When "User paper" is selected with this bit, the transfer/separation output for the "user paper setting" made in the 36 mode is applied.
When "No specification" is selected, the output data by destination and paper size (**R** or inch system) (**Japan** / **R**:64g/m^2 plain paper, Inch: 20lb plain paper, **Inch area** / Inch 20lb plain paper, **R**: 80g/m^2 plain paper, **Metric area** / **R** : 80g/m^2 plain paper, Inch: 20lb plain paper) is used.

Mode	6-2	6-1	6-0
No specification	0	0	0
Not used	0	0	1
Not used	0	1	0
Not used	0	1	1
Recycled paper 1 (Japan)	1	0	0
Recycled paper 2 (Inch area)	1	0	1
Recycled paper 3 (Metric area)	1	1	0
User paper	1	1	1

*10 Transfer/separation output for thick paper
This bit is used when "Thick" is selected for "Paper type/special size setting" in the key operator mode to change transfer/separation output, linear speed, and fixing temperature.
When "No specification" is selected, standard data for 170g/m^2 or heavier paper is used.

- 170g/m^2 or heavier (TSL OFF) : When toner is scattered around the image.
- Plain paper : Transfer / separation data for plain paper of each destination is used to set only the line speed and fixing temperature for thick paper. This setting is applied when the fixing condition is insufficient even though paper is not so thick.

Mode	6-4	6-3
No specification	0	0
170 g/m^2 or more (TSL OFF)	0	1
Plain paper	1	0

*11 Transfer/separation output for thin paper
This bit is used when "Thin" is selected for "Paper type/special size setting" in the key operator mode.
When "No specification" is selected, the output data by destination (**Japan**: 52.4 g/m^2 paper, **Inch area**: 16lb, paper, **Metric area**: 48g/m^2 paper) is used.

Mode	6-6	6-5
No specification	0	0
52.4 g/m^2 paper	0	1
64 g/m^2 paper	1	0

*12 Toner guide roller current correction
When the room temperature causes defect cleaning, the bias value of the toner guide roller should be changed to +10 µA or +20 µA. If the original setting value is changed without any defective cleaning observed, the drum can be damaged, or the toner may be spilled. In this case, the use of copier is never recommended.

Mode	7-1	7-0
Standard	0	0
Approx. +10 µA	0	1
Approx. +20 µA	1	0
No correction	1	1

*13 Transfer/separation output for recycled paper
These bits are used when "Recycle" is selected for "Paper type/special size setting" in the key operator mode.
When "User paper" is selected with these bits, the transfer/separation output for the user paper setting made in the 36 mode is applied. When "No specification" is selected, output data by destination and paper size (**R** or inch series) (**Japan/R**: 64 g/m^2 standard paper, **Inch area**/inch: 20 lb standard paper, AB: 80g/m^2 standard paper **Metric area/R** : 80g/m^2 standard paper, inch: 20lb standard paper) is used.
When humid paper causes uneven image, select "humid paper 1/2/3".

Mode	7-7	7-6	7-5
No specification	0	0	0
64 g/m^2 standard paper (Japan)	0	0	1
20 lb standard paper (USA)	0	1	0
80g/m^2 standard paper (Europe)	0	1	1
Humid paper 1 (Japan)	1	0	0
Humid paper 2 (USA)	1	0	1
Humid paper 3 (Europe)	1	1	0
User paper	1	1	1

*14 Fixing roller initial rotation
Fixing may be insufficient if the temperature of the place where the machine is installed is low. To prevent this, increase the warm-up time (fixing roller initial rotation time) to allow the fixing roller to be evenly warmed up. This bit specifies the condition(s) under which initial rotation of the fixing roller is required.
- Low temperature: Initial rotation of the fixing roller is carried out only under the low temperature condition.
- Low and normal temperatures: Initial rotation of the fixing roller is carried out under low and normal temperature conditions.
- Low, normal, and high temperatures: Initial rotation of the fixing roller is carried out under low, normal, and high temperature conditions.

Mode	8-3	8-2
Low temperature	0	0
Low and normal temperature	0	1
Low, normal, and high temperatures	1	0
No initial rotation	1	1

*15 Fixing roller initial rotation time setting
This bit sets the maximum time of initial rotation of the fixing roller.

Mode	8-5	8-4
2 minutes (Japan)	0	0
3 minutes (Inch and Metric series)	0	1
4 minutes	1	0
10 minutes	1	1

*16 Message switching

Mode	9-3	9-2
Please insert key counter.	0	0
Please insert copy card.	0	1
Please insert coin.	1	0
Please insert key counter.	1	1

*17 Copy count limit

Mode	9-7	9-6	9-5	9-4
No limit	0	0	0	0
1 copy	0	0	0	1
3 copies	0	0	1	0
5 copies	0	0	1	1
9 copies	0	1	0	0
10 copies	0	1	0	1
20 copies	0	1	1	0
30 copies	0	1	1	1
50 copies	1	0	0	0
99 copies	1	0	0	1
No limit	1	0	1	0
No limit	1	0	1	1
No limit	1	1	0	0
No limit	1	1	0	1
No limit	1	1	1	0
No limit	1	1	1	1

*18 Page memory allocation when powered

Mode	10-1	10-0
No allocation	0	0
32 MB	0	1
64 MB	1	0

*19 Page memory allocation when starts

When memory overflow occurs in a mode where page memory is used, this bit allocates page memory at the start of job to print out copied paper, the data of which was already read in the memory.

Page memory quantity differs as in the following table, according to the number of gradation.

1 bit ED	18 MB (A3 x 2)
2 bit ED	36 MB (A3 x 2)

Mode	10-2
No allocation	0
Allocated	1

When “Allocated” is selected by DIP switch 10-0 or 10-1 with power supply ON, this setting has priority.

*20 Transfer/separation out put for high-quality paper

These bits are used when “High-quality” is selected for “Paper type/special size setting” in the key operator mode.

When “No specification” is selected, output data by paper size (**R** or inch system) (**R**: 64g/m^2 standard paper, Inch: 20lb standard paper) is used.

Mode	10-7	10-6	10-5	10-4
No specification	0	0	0	0
64 g/m^2 paper for printing press	0	0	0	1
80g/m^2 paper for printing press	0	0	1	0

*21 Size detection 4

Destination	Mode	13-4	13-3
Metric series	A5R	0	0
	B6R	0	1
Inch series	5.5 x 8.5R	1	0

*22 F4 size detection

Mode	13-6	13-5
8 x 13	0	0
8.25 x 13	0	1
8.125 x 13.25	1	0
8.5 x 13	1	1

*23 Maximum number of sheets that can be stapled

Mode	15-2	15-1
50 sheets	0	0
45 sheets	0	1
40 sheets	1	0
35 sheets	1	1

*24 FNS alarm stop SW

Mode	15-4	15-3
Stop immediately after detection	0	0
Stop at end of copy after detection	0	1
No alarm stop	1	0
No alarm stop	1	1

*25 Selection of area to be erased in non-original area automatic erasure

These bits are used to make a setting associated with the non-original automatic erasure mode (application function).

Mode	16-6	16-5
Standard	0	0
Dark original	0	1
Coping with light interference	1	0

*26 Weekly timer summer time setting

Mode	17-3	17-2	17-1	17-0
0 minute	0	0	0	0
10 minutes	0	0	0	1
20 minutes	0	0	1	0
30 minutes	0	0	1	1
40 minutes	0	1	0	0
50 minutes	0	1	0	1
60 minutes	0	1	1	0
70 minutes	0	1	1	1
80 minutes	1	0	0	0
90 minutes	1	0	0	1
100 minutes	1	0	1	0
110 minutes	1	0	1	1
120 minutes	1	1	0	0
130 minutes	1	1	0	1
140 minutes	1	1	1	0
150 minutes	1	1	1	1

*27 Density selection for scanning tab paper

The higher the brightness level, the higher the density.

Mode	17-6	17-5	17-4
80 (brightness level)	0	0	0
40	0	0	1
60	0	1	0
100	0	1	1
120	1	0	0
160	1	0	1
200	1	1	0
255(not clipped)	1	1	1

*28 Fixing temperature setting switch over

This setting is performed to change fixing temperature when fixing is insufficient or paper curl is excessive.

This setting is effective only when standard paper is used. Therefore, it is not applied when thick or thin paper is used or temperature is specified in power mode.

- Standard Standard setting value
- Standard+α Set when fixing is insufficient
- Standard-α Set when paper curl is excessive

Mode	19-3	19-2	19-1
Standard	0	0	0
Standard+5°C	0	0	1
Standard+10°C	0	1	0
Standard+15°C	0	1	1
Standard-5°C	1	0	0
Standard-10°C	1	0	1
Standard-15°C	1	1	0
Standard-20°C	1	1	1

*29 IP scanner default resolution

Mode	19-7	19-6
400dpi	0	0
600dpi	0	1
200dpi	1	0
300dpi	1	1

*30 Number of punched holes

Mode	22-2	22-1
2 holes (Japan)	0	0
3 holes (Inch area)	0	1
4 holes (Metric area)	1	0

*31 Image density selection (toner density selection of developer)
These bits set the toner density of developer by changing toner supply threshold and developing sleeve rotation speed with image density unchanged.
Decrease toner density when the image is gray background or toner is scattered. Increase toner density when the image is unevenly transferred or white spots occur.

Mode	23-3	23-2
Standard toner density	0	0
Approx. 0.75% up	0	1
Approx. 0.75% down	1	0
Approx. 1.5% down	1	1

Note: There are three DIP switches to change the image density : 5-0/1 (toner concentration threshold), 5-2/3 (lase PWM), and 23-2/3 (toner density of developer). The priority of order of these adjustment are as follows:
(1) Laser PWM
(2) Toner density of developer
(3) Toner concentration threshold

[4] Setting the Paper Size

When the LCT paper type is changed, it must be stored in the main body. This setting is effective when an optional LCT is added.
Select a paper size among standard, non-standard paper sizes. After selecting a tray size, specify a paper size.

1. Setting the standard size

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 2 Paper size setting".
3	**[Paper size setting mode Screen]** Press the STD SIZE key.
4	Press the ▲ or ▼ button to select a paper size.
5	Press the OK key to finish setting.To cancel the new setting, press the CANCEL key, Pressing either key will display the Memory setting mode menu Screen again.

2. Setting the non-standard size

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 2 Tray Size Setting."
3	**[Paper size setting mode Screen]** Press the Non STD size key.
4	**[Paper size input Screen]** Press the key for specifying the main (vertical) scanning direction to highlight it.
5	Press the ▲ or ▼ key or numeric keys to enter the size in the main (vertical)scanning direction. Max. 314 mm
6	Press the key for specifying the sub (horizontal) scanning direction to highlight it.
7	Press the ▲ or ▼ key or numeric keys to enter the size in the sub (horizontal) scanning direction. Max. 223 mm(LT-402), 459mm(LT-412)
8	Press the OK key to finish setting. To cancel the new setting, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

3. Setting the wide paper

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 2 Paper size setting."
3	**[Paper size setting mode Screen]** Press the Wide size paper key.
4	**[Paper size selecting Screen]** Press the ▲ or ▼ key to select a wide paper size.
5	Input size key.
6	**[Paper size input Screen]** Press the key for specifying the main (vertical) scanning direction to highlight it.
7	Press the ▲ or ▼ key or numeric keys to enter the size in the main (vertical) scanning direction. Max. 314 mm
8	Press the button for specifying the sub (horizontal) scanning direction to highlight it.
9	Press the ▲ or ▼ key or numeric keys to enter the size in the sub (horizontal) scanning direction. Max. 223mm(LT-402), 459mm(LT-412)
10	Press the OK key to finish setting. To cancel the new setting, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

Reference 1:
Each time the current tray size is changed on this screen, the new setting will be written into the non-volatile memory.

[5] PM Count Resetting

Care should be taken not to reset the PM count by mistake.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 3 PM count".
3	**[PM count/cycle Screen]** Press the COUNT RESET key.
4	**[Reset Confirmation Screen]** Press the YES key.The PM count is reset and the start date is input automatically. Pressing the NO key closes the Reset Confirmation screen at once.
5	Press the OK key to finish setting. To cancel the new setting, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

[6] Setting the PM Cycle

This function allows you to change the PM cycle.

Caution: The PM cycle is factory-set. Use this function to change the factory-set PM cycle.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 3 PM count".
3	**[PM count/cycle Screen]** Press the PM Cycle Setting key.
4	After making sure that three digits of the cycle value are displayed in reverse video, enter a desired cycle value using numeric keys. Only the three digits of the cycle value can be entered. The entered digits will be shifted to the left one after another.
5	Press the OK key to finish setting. To cancel the new setting, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

[7] Collecting Data

This function allows you to view various data retained by the machine.

Reference: The above data can also be viewed using the data collection function of the KRDS.

1. Data that can be Viewed

No.	Data Type	Pre-operation
1	Total count of each paper size	
2	Copy count of each paper size	
3	Print count of each paper size	
4	RADF count	
5	Black ratio of each section	
6	Black ratio of ranking list	
7	JAM data of time series	Enter the 25 mode, select " 1 Software DIPSW Setting", and set bit 1 of address 30-1 to 1. (Note 1)
8	JAM count	
9	Count of each copy mode	
10	SC count	
11	JAM count of each section	
12	SC count of each section	

Note: When bit 1 of DIP switch 30-1 is set to 0, only collected data 1 to collected data 6 can be viewed.

2. Viewing Collecting Data No.1 to No.6

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 4 Data collection".
3	**[Collecting data menu Screen]** Select the collecting data you want to view by pressing one of numeric keys 1 to 6 .
4	**[Individual data view Screen]** View the selected data by scrolling the screen using the ↓ and ↑ keys.
5	Press the RETURN key to return to the Memory setting mode menu Screen.

3. Viewing Collecting Data No.7 to No.12

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 1 Software DIP SW setting".
3	**[Software DIP SW Setting Screen]** Set bit 1 of DIP switch 30-1 to 1.
4	Press the RETURN key to return to the Memory setting mode menu Screen.
5	**[Memory setting mode menu Screen]** Select " 4 Data Collection".
6	**[Collecting data menu Screen]** Select the collected data you want to view by pressing one of numeric keys 7 to 12 . To select the key 11 or later press the ↓ key. If the ↑ key is pressed with key 11 displayed, the Collected Data Selection screen containing keys 1 to 12 appears again.
7	**[Individual data view Screen]** View the selected data by scrolling the screen using the ↓ and ↑ keys. (Note)
8	Press the RETURN key to return to the Memory setting mode menu Screen.

Note: On the Individual Data View screen showing the JAM count of each section (collected data 11) or SC count of each section (collected data 12), the COUNT RESET key appears. Pressing the COUNT RESET key resets the selected data count.

4. Details on Display Data

(1) Collecting data No.1 to No.3: Total/copy/print counts of each paper size

NO	Destination			Maximum count	Remarks
	Japan	Inch area	Metric area		
1	A2	17x22	A2	99999999	All counters are 8-digit counters.
2	A3	11x17	A3		
3	B4	8.5x14	B4 (8K)		
4	A4	8.5x11	A4		
5	B5	5.5x8.5	B5 (16K)		
6	A5	-	A5		
7	B6	-	F4		
8	8.5x14	-	-		
9	8.5x11	A4	-		
10	Special	Special	Special		

1. Each time a printed copy is ejected, the counter is incremented by 1 regardless of the paper size.
2. Any size other than paper sizes 1-9 is counted as Special size. (SEL/LEF are counted as the same size.)

(2) Collecting data No.4: RADF mode

NO	Items	Maximum count	Remarks
1	Number of originals fed in ADF mode	99999999	All counters are 8-digit counters.
2	Number of originals fed in RADF mode		
3	Number of 1-sided mixed original fed		
4	Number of 2-sided mixed original fed		
5	Number of 1-sided Z-folded mode original fed		
6	Number of 2-sided Z-folded mode original fed		
7	Undefined		
8			
9			
10			
11			
12			
13			
14			
15			
16			

1. The counter is incremented each time one original side has been scanned in each mode.
2. Counters 1 and 2 count original sides independently of counters 3-7.

(3) Collecting data No.5: Black ratio of each section
This allows checking the average black ratio of 5000 prints for the latest 30 data.

(4) Collecting data No.6: Black ratio of ranking list
This allows checking black ratio data, number of prints, transfer paper size, mode, and date for the top 15 job data ranked from highest rates of black ratio.
The black ratio rank list is allowed to contain only those jobs which have five or more copies, so that jobs that have made erroneous copies will be excluded from the list.

(5) Collecting data No. 7: JAM data of time series
A jam code, total count, date and time of occurrence, tray type, paper size, and magnification can be displayed for the latest 100 jams.

(6) Collecting data No.8: JAM count / Collecting data No.11: JAM count of each section (can be reset)

NO	Description of JAM		Jam position display on operation panel	Maximum count	Counting condition
	Location of jam	Code displayed when display of jam code is selected by 25DIPSW			
1	By-pass paper feed	10-1	6	999999	All counts are 6-digit counters.
2		10-2	6		
3	Tray 1 paper feed	11-1	1		
4		11-2	1		
5	Tray 2 paper feed	12-1	2		
6		12-2	2		
7	Tray 3 paper feed	13-1	3		
8		13-2	3		
9	Tray 4 paper feed (Japan only)	14-1	4		
10		14-2	4		
11	LCT paper feed	15-1	5		
12		15-2	5		
13	Paper feed conveyance (common to all trays)	17-1	9		
14	Paper feed conveyance (tray 1)	17-2	7		
15	Paper feed conveyance (tray 2/3/4)(Japan only)	17-3	7		
16	Paper feed conveyance (tray 2)	17-4	7		
17	Paper feed conveyance (tray 3)	17-5	7		
18	Paper feed conveyance (tray 4) (Japan only)	17-6	7		
19		17-7	7		
20	LCT	17-8	8		
21	Drum	21-1	10		
22	Second paper feed conveyance	31-1	9		
23		31-2	10		
24	Fixing / Exit	32-1	11		
25		32-2	11		
26		32-3	11		
27		32-4	11		
28		32-5	11		
29	ADU	92-1	12		
30		92-2	12		
31		93-1	13		
32		94-1	13		
33		94-2	13		
34	Vertical conveyance door	19-1	-		
35	LCT	19-2	-		
36	Front door	51-1	-		
37	FNS	71-1	-		
38		71-2	-		

NO	Description of JAM		Jam position display on operation panel	Maximum count	Counting condition
	Location of jam	Code displayed when display of jam code is selected by 25DIPSW			
39	ADF	61-1	-	999999	All counts are 6-digit counters.
40		61-2	-		
41		62-1	14		
42		62-2	14		
43		62-3	14		
44		62-4	14		
45		62-5	14		
46		62-6	14		
47		62-7	14		
48		62-8	14		
49		62-9	14		
50		62-10	14		
51		63-1	15		
52		63-2	15		
53		63-3	15		
54		63-4	15		
55		63-5	15		
56	FNS	72-16	16		
57		72-17	16		
58		72-18	16		
59		72-19	16		
60		72-20	16		
61		72-21	16		
62		72-22	17		
63		72-23	17		
64		72-24	18		
65		72-25	18		
66		72-26	18		
67		72-27	16		
68		72-28	16		
69		72-29	16		
70		72-30	16		
71	-	72-32	19		
72		72-33	19		
73		72-34	19		
74	PI	72-35	17		
75	-	72-38	20		
76		72-39	20		
77		72-40	20		
78		72-41	20		
79		72-42	20		
80	PK	72-43	16		
81	-	72-44	20		
82		72-45	20		
83		72-46	20		
84		72-47	20		
85	FNS	72-48	18		

NO	Description of JAM		Jam position display on operation panel	Maximum count	Counting condition
	Location of jam	Code displayed when display of jam code is selected by 25DIPSW			
86	PI	72-49	17	999999	All counts are 6-digit counters.
87		72-50	17		
88		72-51	17		
89	FNS	72-81	16		
90		72-82	16		
91		72-83	16		
92		72-90	16		

1. When a jam occurs, the associated counter is incremented by 1 (Static jams are not counted.)

(7) Collecting Data No.7:Count of each copy mode

NO	Item	Maximum count	Counting condition
1	1-1 mode	99999999	All counters are 8-digit counters.
2	1-2 mode		
3	2-1 mode		
4	2-2 mode		
5	ADF1-1 mode		
6	ADF1-2 mode		
7	Mixed original mode		
8	Index original		
9	Z-folded original mode		
10	LEF/portrait, SEF/landscape normal set		
11	LEF/landscape, SEF/portrait normal set		
12	LEF/portrait, SEF/landscape reverse set		
13	LEF/landscape, SEF/portrait reverse set		
14	Auto (text/photo)		
15	Text		
16	Photo		
17	Pencil		
18	Non STD size		
19	1 staple (upper-left)		
20	1 staple (upper-right)		
21	2 staples (left side)		
22	2 staples (top side)		
23	Stapled at left		
24	Stapled at right		
25	Stapled on top		
26	Three-holding		
27	Stitch and fold		
28	Folding		
29	Main tray: Group		
30	Main tray: Sort		
31	Main tray: Non sort		
32	Sub-tray: Group (FACE DOWN)		
33	Sub-tray: Group (FACE UP)		
34	Sub-tray: Sort (FACE DOWN)		
35	Sub-tray: Sort (FACE UP)		
36	Sub-tray: Non sort (FACE DOWN)		
37	Sub-tray: Non sort (FACE UP)		
38	Cover sheet		
39	Trimmer		
40	Real size copy		
41	Preset magnification E4		
42	Preset magnification E3		
43	Preset magnification E2		
44	Preset magnification E1		
45	Preset magnification R4		

NO	Item	Maximum count	Counting condition
46	Preset magnification R3	99999999	All counters are 8-digit counters.
47	Preset magnification R2		
48	Preset magnification R1		
49	User lens mode 1		
50	User lens mode 2		
51	User lens mode 3		
52	ZOOM		
53	Vertical/Horizontal zoom		
54	Maximum ZOOM		
55	Minimum ZOOM		
56	APS		
57	AMS		
58	Auto density (EE)		
59	User density level 1		
60	User density level 2		
61	Interrupted copy		
62	Automatic image rotation cancellation		
63	Inter sheet		
64	Chapter control		
65	Combination		
66	Booklet copy		
67	OHP interleave (copy)		
68	OHP interleave (blank)		
69	Image insert		
70	Dual Page		
71	Program job		
72	Non-image area erase		
73	Reverse image		
74	Auto repeat		
75	Manual repeat		
76	STD size repeat		
77	Frame erasure		
78	Fold erasure		
79	Auto layout		
80	Full-image Area		
81	Image Shift		
82	Reduction shift		
83	Overlay		
84	Water mark		
85	Stamp		
86	Date / Time		
87	Page		
88	Numbering		
89	Set quantity 1		
90	Set quantity 2-5		
91	Set quantity 6-10		

NO	Item	Maximum count	Counting condition
92	Set quantity 11 or more	99999999	All counters are 8-digit counters.
93	Energized time of power condition 1		Total period of time during which image control board is energized. Total period of time during the operation of CPU.
94	Energized time of power condition 2		Total period of time during which remote power supply 2 is on. 1 is counted per minutes.
95	Unused		
96	Energized time of power condition 4		Total period of time during which remote power supply 3 is on. 1 is counted per minutes.
97	Time during low power mode		Total period of time during which low power mode is selected. The count is incremented by 1 per minute.
98	Time during WUP		Total period of time during which fixing unit heater is ON when the fixing is UNREADY. The count is incremented by 1 per second. Data is output per minute.
99	Time during front door open		Total period of time during which front door is open. The count is incremented by 1 per second. Data is output per minute.
100	Ope. time in 1 side straight exit		Total time from start to end of printing. The count is incremented by 1 per second. Data is output per minute. (Halt time caused by JAM stop, etc. is not included.)
101	Ope. time in 1 side reverse exit		
102	Ope. time in 2 side print		
103	Operation time in ADF mode		Total operation time of ADF. The count is incremented by 1 per second. Data is output per minute.
104	Morning Correction count		The count is incremented by 1 each time correction is made before starting work in the morning.
105	Time during APS sensor on		Total period of time during which APS sensor is ON. The count is incremented by 1 per second. Data is output per minute.
106	N of main tray used jobs		Number of jobs
107	N of sub tray used jobs		
108	N of stapling folding used jobs		
109	N of folding jobs		
110	N of ADF NF occurred		

NO	Item	Maximum count	Counting condition
111	N of ADF special error 1 occurred		Original size detection error occurrence count
112	N of ADF special error 2 occurred		Next original information error occurrence count
113	N of ADF special error 3 occurred		Mixed loading prohibited original size error occurrence count
114	N of Scanner scanned		The count is incremented by 1 each time Platen Mode Copy button is pressed.
115	N of electrode cleaned		
116	N of memory overflow		
117	N of fixing alarm occurred		
118	N of no toner stop occurred		
119	N of AGC retry		
120	N of sub scan beam correct error		
121	N of mis-centering correct error		
122	N of ADF distortion adjust error		
123	N of ADF distortion data error		
124	Compression memory overflow		
125	Page memory overflow (scan)	99999999	
126	Page memory overflow (print)		
127	FNS alarm (tray/trimming)		
128	FNS alarm (staple)		
129	Scanner count		
130	N of ADF special error 4 occurred		Ready-time out error
131	Store for HDD (Sync. with Copying)		
132	Store for HDD (SRV mode scan-> HDD)		
133	Store for PC (SRV mode scan-> HDD)		
134	Store for PC (SRV mode HDD-> PC)		
135	Recall from HDD (SRV mode HDD)		
136	Recall from PC (SRV mode PC)		
137	Image edit count by SRV		
138	Wide paper count (A3W or 11x17W)		
139	Wide paper count (A4W or 8.5x11W)		
140	Wide paper count (A4RW or 8.5x11RW)		
141	Wide paper count (A5W or 5.5x8.5W)		
142	Wide paper count (Others)		
143	Punch		
144	Z-fold		

(8) Collecting data No.10: SC count / Collecting data No.12: SC count of each section (can be reset)

NO	Trouble code		Description	Maximum count	Remarks
1	13	1	Paper feed MT EM	9999	All counters are 4-digit counters.
2	13	2	LCT conveyance MT EM		
3	13	3	Loop roller motor fuse blowing detection		
4	18	10	Tray 1 up MT EM		
5	18	11	Tray 1 up error		
6	18	20	Tray 2 up MT EM error		
7	18	21	Tray 2 up error		
8	18	30	Tray 3 up MT EM error		
9	18	31	Tray 3 up error		
10	18	40	Tray 4 up MT EM error (Japan only)		
11	18	41	Tray 4 up error (Japan only)		
12	18	50	LCT up/down MT EM		
13	18	51	LCT up/down error		
14	18	60	By-pass tray up error		
15	21	1	Charging corona unit cleaning MT error 1		
16	21	2	Charging corona unit cleaning MT error 2		
17	21	3	Charging corona unit cleaning MT error 3		
18	21	4	Charging corona unit cleaning MT error 4		
19	21	5	Transfer/separation corona unit cleaning MT error 1		
20	21	6	Transfer/separation corona unit cleaning MT error 2		
21	21	7	Transfer/separation corona unit cleaning MT error 3		
22	21	8	Transfer/separation corona unit cleaning MT error 4		
23	22	1	Developing suction fan lock		
24	22	2	Cleaner cooling fan lock		
25	23	1	Toner bottle MT EM		
26	23	2	Developing MT EM		
27	23	3	Drum MT error		
28	28	1	Charging EM		
29	28	2	Transfer EM		
30	28	3	Separation EM		
31	29	1	Maximum density correction error 1		
32	29	2	Maximum density correction error 2		
33	29	3	Maximum density correction error 3		
34	29	4	γ correction error 1		
35	29	5	γ correction error 2		
36	29	6	γ correction error 3		
37	29	7	Dot diameter correction error 1		
38	29	8	Dot diameter correction error 2		
39	32	1	Conveyance suction fan lock		
40	32	2	Paper exit fan/2 lock		
41	32	3	Paper exit fan/R lock		

NO	Trouble code		Description	Maximum count	Remarks
42	32	4	Paper exit fan/F lock	9999	All counters are 4-digit counters.
43	33	1	Second paper feed MT EM		
44	34	1	Fixing upper roller high temperature error detection		
45	34	2	Fixing upper roller high temperature error detection		
46	35	1	Fixing upper roller low temperature error detection 1		
47	35	2	Fixing upper roller low temperature error detection 2		
48	35	3	Fixing upper roller low temperature error detection 3		
49	36	1	Fixing upper roller sensor error detection		
50	36	2	Fixing lower roller sensor error detection		
51	41	1	Scanner HP return error		
52	41	2	Polygon MT error		
53	42	1	Scanner cooling fan lock		
54	42	2	Write section cooling fan lock		
55	46	1	APC error		
56	46	2	Scanner FIFO error		
57	46	3	Printer FIFO error		
58	46	5	Compressed input/output FIFO error		
59	46	6	Expansion error		
60	46	8	Index sensor error		
61	46	10	No margin of scanner control		
62	46	11	No margin of printer control		
63	46	12	SVV length error		
64	46	13	Scanner time-out		
65	46	14	Printer time-out		
66	46	15	Expansion device access error		
67	46	16	Compression device access error		
68	46	17	Filter factory error		
69	46	19	Memory device access error on data flow		
70	46	21	Data flow memory mode time-out		
71	46	23	SVV off error		
72	46	24	Black/white collection error		
73	46	25	AOC/AOG Level adjustment error		
74	46	26	Invalid correction data by resolution		
75	46	27	Density conversion (γ curve generation error)		
76	46	30	Calibration abend		
77	46	31	APC initial sampling error		
78	46	32	MPC error		
79	46	33	Sub-scan beam correction error		
80	46	34	Unfinished Calibration		
81	46	35	Continuous copy page area error		

NO	Trouble code		Description	Maximum count	Remarks
82	46	40	HDD initialization trouble	9999	All counters are 4-digit counters.
83	46	41	HDD JOB save error		
84	46	42	HDD periodic cleaning error		
85	46	43	HDD access failure		
86	46	50	Tandem communication error		
87	46	51	Tandem image communication error		
88	46	64	PWMg curve generation failure		
89	46	80	Insufficient/broken message queue		
90	46	81	Invalid message or method parameter		
91	46	82	Invalid task		
92	46	83	Invalid event		
93	46	90	Memory access error		
94	46	91	Header access error		
95	46	99	DIMM initialization error		
96	49	1	IP-511 board failure		
97	49	2	IP-511 communication error		
98	49	3	Direct Memory Access error		
99	49	4	IP-511 HDD failure		
100	49	5	IP-511 fan lock		
101	50	1	Main body drive serial input error 1		
102	50	2	Main body drive serial input error 2		
103	50	3	Main body drive serial input error 3		
104	50	4	Main body drive serial input error 4		
105	50	5	Drive board communication reception error detection		
106	50	10	Image control board communication connection error		
107	50	11	Detection error of image control board communication serial reception error		
108	52	1	Power supply cooling fan lock		
109	52	2	Main body cooling fan/1 lock		
110	53	1	Fixing MT EM		
111	56	2	Operation section communication error		
112	62	1	ADF fan lock		
113	70	1	FNS communication error		
114	70	2	FNS communication start acknowledgement error detection error		
115	77	1	Shift driving error		
116	77	2	Tray up/down driving error		
117	77	3	Alignment plate/U drive error		
118	77	4	Exit roller drive error		
119	77	5	Exit driving error		
120	77	6	Stapler movement driving error		
121	77	7	Clincher rotation driving error		
122	77	8	Stapler rotation driving error		
123	77	11	Stapler/F error		
124	77	12	Stapler/R error		

NO	Trouble code		Description	Maximum count	Remarks
125	77	13	Clincher/F driving error		
126	77	14	Clincher/F driving error	9999	All counters are 4-digit counters.
127	77	21	Stopper motor drive error		
128	77	22	Alignment plate/L drive error		
129	77	25	Folding knife motor drive error		
130	77	26	Folding conveyance motor drive error		
131	77	31	Trimmer conveyance drive error		
132	77	32	Trimmer conveyance error		
133	77	33	Trimmer rear end stopper drive error		
134	77	34	Trimmer rear end release motor driving error		
135	77	35	Trimmer press motor driving error		
136	77	36	Trimmer pusher motor driving error		
137	77	37	Trimmer holder motor driving error		
138	77	41	Sheet feeder up motor driving error /L		
139	77	42	Sheet feeder up motor driving error /U		
140	77	43	Sheet feeder conveyance driving error		
141	77	52	Motor drive error for Z-fold stopper 1		
142	77	53	Motor drive error for Z-fold stopper 2		
143	77	54	Punch drive motor driving error		
144	77	81	Gate motor drive error		
145	77	91	Sub-CPU reception error		
146	77	92	Main CPU reception error		
147	80	1	Printer control initial communication error		
148	80	2	Printer control communication error		
149	80	3	Operation panel communication error		
150	80	1*	Printer control ISW not written		
151	80	21	VIF control ISW not written		
152	80	30	ISW time-out error		
153	80	31	ISW data error		
154	80	32	ISW write error		
155	80	40	FNS with unwritten ISW		
156	80	41	ZU with unwritten ISW		
157	90	1	ADU drive serial input error 1		
158	90	2	ADU drive serial input error 2		
159	92	1	ADU cooling fan lock		

Note: When DIP switch is set to 3-1-1, SC34, 35, and 36 are not counted.

[8] Copy Count by Parts to be Replaced (Fixed Parts)

This function allows you to display or reset the copy count for a fixed part or data.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select " 5 Parts counter."
3	**[Copy count of parts menu Screen]** Select " 1 Count of special parts."
4	**[Copy count of special menu Screen]** Data numbers (No.), part names (Name), and count values are displayed in a list format. Using ▲ and ▼ keys, select a part name. To scroll the screen, use ⬆ and ⬇ keys.
5	Press the COUNT RESET key to reset the count value of the part highlighted.
6	Press the RETURN key to return to the Memory setting mode menu Screen.

Copy count parts counter

NO	Part name	Maximum count	Counting condition
1	Web unit	99999999	Count 1 per ejected paper for single sided, 2 for double sided
2	Developer		25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, 8k, count 2 per ejected paper for single sided, 4 for double sided
3	OPC drum		
4	Cleaning blade		
5	Toner reclaim roller unit assembly		
6	Charging blade		
7	Charger cleaning block for upper assembly		
8	Charger cleaning block for lower assembly		
9	Drum separation claw		
10	Discharging wire		

NO	Part name	Maximum count	Counting condition
11	Trans./sep. cleaning assembly	99999999	25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, 8k, count 2 per ejected paper for single sided, 4 for double sided
12	Fixing upper roller		
13	Fixing lower roller		
14	Fixing upper claw		
15	Fixing lower claw		
16	Heat insulate sleeve (upper)		
17	Upper roller bearing		
18	Cleaning roller		
19	Toner control board unit		
20	Trans./sep. corona unit		
21	Separation cleaning assembly		
22	Charging wire		
23	Upper roller error detection sensor		
24	Ozone filter		
25	Charging corona unit		
26	PCL assembly		
27	Developer		
28	TSL cover assembly		
29	Tray 1 feed rubber		1 is counted each time the paper from tray 1 is ejected.
30	Tray 1 feed conv/rev rubber		
31	Tray 1 feed clutch		
32	Tray 1 convey clutch		
33	Tray 1 feed count		
34	Tray 2 feed rubber		1 is counted each time the paper from tray 2 is ejected.
35	Tray 2 feed conv/rev rubber		
36	Tray 2 feed clutch		
37	Tray 2 convey clutch		
38	Tray 2 feed count		
39	Tray 3 feed rubber		1 is counted each time the paper from tray 3 is ejected.
40	Tray 3 feed conv/rev rubber		
41	Tray 3 feed clutch		
42	Tray 3 convey clutch		
43	Tray 3 feed count		

NO	Part name	Maximum count	Counting condition
44	Tray 4 feed rubber (Japan only)	99999999	1 is counted each time the paper from tray 4 is ejected.
45	Tray 4 feed conv/rev rubber (Japan only)		
46	Tray 4 feed clutch (Japan only)		
47	Tray 4 convey clutch (Japan only)		
48	Tray 4 feed count (Japan only)		
49	By-pass feed roller		1 is counted each time the paper from by-pass tray is ejected.
50	By-pass conveyance/reverse roller		
51	By-pass count		
52	LCT feed roller		1 is counted each time the paper from LCT is ejected.
53	LCT conveyance/reverse roller		
54	LCT feed clutch		
55	LCT conveyance clutch		
56	LCT feed count		
57	Loop roller		1 is counted each time the paper from tray 1, tray 2, tray 3, tray 4 and LCT is ejected.
58	V-convey exit feed roller		1 is counted each time the paper from tray 2, tray 3 and tray 4 is ejected.
59	V-convey feed roller/M		1 is counted each time the paper from tray 3 and tray 4 is ejected.
60	V-convey feed roller/ L		1 is counted each time the paper from tray 4 is ejected.
61	V-convey feed clutch 1		1 is counted each time the paper from tray 2, tray 3, and tray 4 is ejected.
62	V-convey feed clutch 2		1 is counted each time the paper from tray 3 and tray 4 is ejected.
63	Web solenoid		Every operation
64	Registration clutch		1 is counted each time single side original is ejected; 2 is counted each time double side paper is ejected.
65	ADU preregistration clutch		1 is counted each time double side paper is ejected (not counted for single side paper)
66	Resistration feed count		1 is counted each time single side original is ejected; 2 is counted each time double side original is ejected.
67	Reverse exit count		2 is counted each time single side paper is ejected after being reversed. 0 is counted each time single side paper is ejected straight. 1 is counted each time bouble side paper is ejected.
68	ADU feed count		1 is counted each time double side paper is ejected (not counted for single side paper)

NO	Part name	Maximum count	Counting condition
69	FNS up/down motor		1 is counted each time the paper from FNS main tray is ejected. 1 is counted each time a copy is ejected in stapling mode.
70	FNS stapler/front	99999999	1 is counted each time a copy is ejected in stapling front 1-point stapling, stapling 2-point stapling, or middle binding mode.
71	FNS stapler/rear		
72	FNS shift motor		1 is counted each time even-numbered paper is ejected.
73	FNS exit opening open/close motor		1 is counted each time large size stapling (A4R/8.5x11R or larger) job starts. 1 is counted each time paper is ejected from each section. 1 is counted each time stitch and fold or folding job starts.
74	FNS folding knife motor		1 is counted each time one set of papers in stapling/folding, folding, or three-holding mode is ejected.
75	FNS By-pass SD		1 is counted each time one set of papers in DM folding mode is ejected.
76	FNS DM gate SD		Counted each time one paper is ejected in three-holding mode
77	PI sheet feed clutch/U		Counted each time are paper is fed into PI/U
78	PI feed roller unit/A		
79	PI feed roller unit/B		
80	PI reverse robber unit		
81	PI torque limiter		
82	PI sheet feed clutch/L		Counted each time one paper is fed into PI/L
83	PI feed roller unit/A		
84	PI feed roller unit/B		
85	PI reverse robber unit		
86	PI torque limiter		
87	Trimmer knife		1 is counted each time knife movement is made
88	Punched holes (2 holes)		Number of ejected papers with the punch mode selected
89	Punched holes (3 holes)		
90	Punched holes (4 holes)		
91	Punched holes (2/3 holes)		Not used
92	ADF feed roller		Number of originals passes in all modes
93	ADF Separation roller		
94	ADF double-feed prevention robber		
95	ADF double-feed prevention roller		
96	ADF paper exit solenoid		1 is counted each time one original passes in the double side or the mixed mode

NO	Part name	Maximum count	Counting condition
97	ADF feed clutch		single side: Number of originals passes in every single side mode count double side: Number of originals passes in every double side mode x3 counts
98	ADF reverse solenoid		1 is counted each time one original passes in the double side or the mixed mode
99	ADF pressure roller release solenoid		2 is counted each time one original passes in the double side or the mixed mode
100	Exposure ON time		Unit
101	Sub power switch		1 is counted each time sub power is switched off.
102	Door switch		1 is counted each time front door is opened.
103	Drum separation claw solenoid	99999999	1 is counted each time a paper is ejected, 2 is counted for double-sided.
104	Main power switch		1 is counted each time image control turns ON (number of times CPU is activated from other than sub power supply (SK/KRDS/SHUT OFF/WT))

124		99999999	
125			
126			
127			
128			

[9] Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to make the following settings for an optional part or data:

1. Copy count resetting
2. Limit value setting
3. Part number setting
4. Part name setting

The above settings can be made for 30 data numbers, No.1 to No.30.
The copy count is incremented by 1 for each side irrespective of the paper size.

1. Resetting the Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to reset the copy count by parts to be replaced (optional parts).

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 5 Parts counter".
3	**[Copy count of part menu Screen]** Select the " 2 Count of each parts".
4	**[Copy count of each part Screen]** Data numbers (No.), part names (Name), part numbers (P/N), and count/limit values are displayed in a list format. Using ▲ and ▲ keys, select a part name. To scroll the screen, use ▼ and ▲ keys.
5	Press the COUNT RESET key to reset the count value of the part highlighted.
6	Press the RETURN key to return to the Memory setting mode menu Screen.

Reference: If the copy count exceeds the limit, the * mark appears to the left of the limit value.

2. Changing the data on the Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to change the limit value, part number, or part name for the desired optional copy count by parts to be replaced (optional parts).

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 5 Parts counter".
3	**[Copy count of part menu Screen]** Select the " 2 Count of each parts".
4	**[Copy count of each part Screen]** Data numbers (No.), part names (Name), part numbers (P/N), and count/limit values are displayed in a list format. Using ▲ and ▲ keys, select a data number. To scroll the screen, use ▼ and ▲ keys.
5	Press the Part Name Set, P/N Set, or Limit Set key.
6	**[Data change screen by parts to be replaced]** Press the Parts name , P/N set or Limit set key corresponding to the data you want to change.
7	Enter new data using alphabetic and numeric keys.
8	Perform steps 6 and 7 repeatedly to change other data.
9	Press the OK key to allow the new data to take effect. To cancel the new data, press the CANCEL key. Pressing either key will display the Copy count by parts to be replaced (optional parts) screen again.
10	**[Data change screen by parts to be replaced]** Press the RETURN key to return to the Memory setting mode menu Screen.

Reference1: The characters entered in the data field of each data item will be shifted to the left one after another.

Reference2: When the number of entered characters exceeds 10, the leftmost character will disappear.

[10] Setting Passwords

This function allows you to set the following passwords:

1. Key operator password (4 digits)
   This password is required to enter the key operator mode.
2. EKC master key code (8 digits)
   This code is necessary when entering various EKC setting modes.
3. Weekly timer password (4 digits)
   This password is necessary when entering various weekly timer setting modes.

   Note: This password cannot be set if "Weekly timer ON" is not specified for the weekly timer in the key operator mode.
4. HDD management password (4 digits)
   This password is necessary when entering the HDD management modes in the key operator mode while connecting the optional hard disk.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 6 Password setting".
3	**[Password setting mode Screen]** Select "key operator password (4 digits)", "EKC master key code (8 digits)", "Weekly timer password (4 digits)" or "HDD management password (4 digits)".
4	Enter a new password using numeric keys.
5	Perform step 3 and 4 repeatedly to set other passwords.
6	Press the OK key to allow the passwords to take effect. To cancel the new passwords, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

Reference1: The digits entered in the data field of each data item will be shifted to the left one after another.

Reference2: When the number of entered digits exceeds 4 or 8, the leftmost character will disappear.

Reference3: Setting the key operator password, weekly timer password, and HDD management password to "0000" allows you to use individual modes without passwords. That is, the menu screen of each mode appears directly without displaying the password input screen.

[11] Setting the Telephone Number and/or Fax Number of the Service Center

This function allows you to set the telephone number and/or fax number of the service center displayed when a service call occurs. The telephone number and/or fax number are/is also displayed as the basic help topic "Contact Number of Service Center" on the user screen. This function is not related to the RD mode; the telephone number and/or fax number are/is just displayed on the screen.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 7 Telephone number/FAX number setting".
3	**[Customer support TEL/FAX setting Screen]** Select "Service center Telephone number (16 digits)" or "Service center Fax number (16 digits)".
4	Enter the telephone or fax number using numeric keys.
5	To set both telephone number and fax numbers, perform steps 3 and 4 repeatedly.
6	Press the OK key to allow the telephone number and/or fax number to take effect. To cancel the telephone number and/or fax number, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

Reference1: If the length of a telephone or fax number is shorter than 16 digits, use a hyphen(s) to make the overall length 16 digits.

Reference2: The entered digits will be shifted to the left one after another, starting at the right end.

[12] Setting the Serial Number

This function allows you to display, set, or change the serial number of the main body or option.
Serial number data can also be read from KRDS.

Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 8 Serial number setting".
3	**[Serial number setting mode Screen]** Press the key you want to change among the Main body , Option tray , or Finisher key.
4	Enter the serial number using alphabetic and numeric keys.
5	Perform steps 3 and 4 repeatedly to set other serial numbers.
6	Press the OK key to allow the serial numbers to take effect. To cancel the serial numbers, press the CANCEL key. Pressing either key will display the Memory setting mode menu Screen again.

Reference1: If the set serial number is invalid, a pop-up window appears to display a warning message. Press the OK key to close the pop-up window, then enter a valid serial number again.

Reference2: The entered characters will be shifted to the left one after another, starting at the right end.

[13] Displaying the ROM Version

This function allows you to display the versions of the installed ROMs.

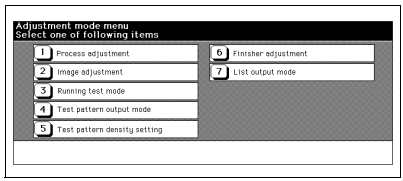
Step	Operation
1	Enter the 25 mode.
2	**[Memory setting mode menu Screen]** Select the " 9 Indication of ROM version".
3	**[Indication of ROM Version Screen]** The versions of the ROMs installed in the Image control(I1 to I5), Printer control(C1 to C5), Finisher, or Z-fold are displayed.
4	Press the RETURN key to return to the Memory setting mode menu Screen.

36 MODE

[1] Setting Method

This machine is provided with 36 Mode as an adjustment mode.
This mode is used to perform various adjustments.

1. Turn off SW2 (sub power).
2. Turn on SW2 while holding down both paper quantity buttons 3 and 6.
   The Adjustment mode menu Screen appears.
   At this point, you are in 36 mode and normal copy operation is disabled.
   [Adjustment mode menu Screen]



3. Press the number key corresponding to the item to adjust.
   The setting screen for each item is displayed.
4. Enter data in each adjustment screen.
5. If there are several adjustment items, press the NEXT or BACK key to select the desired item. If there are more screens below, press the key displayed on screen to change screen.
6. Enter data and press the SET key if it is available, to confirm your entry.
7. Press the RETURN key to end adjustment.
8. Turn off the SW2 and exit the 36 mode.
9. The new adjustment values take effect after restarting the machine.

[2] High Voltage Adjustment

Adjusting the high voltage for charging, transfer, separation, and development.

1. Select " 1 Process adjustment" in the Adjustment mode menu Screen to display the Process adjustment mode menu Screen.
2. Press " 1 High voltage adjustment" in the Process adjustment mode menu Screen to display the High voltage adjustment mode menu.
3. High voltage adjustment consists of the following:
   1 HV adjustment (Charge)
   2 HV adjustment (Transfer)
   3 HV adjustment (Separation AC)
   4 HV adjustment (Separation DC)
   5 HV adj. (Charging grid voltage)
   6 HV adj. (Bias of development)
   7 Transfer guide confirm
   8 HV adjustment (TGR)
4. Press the number key corresponding to the item to be adjusted.
   The adjustment screen of the selected item is displayed.
5. When adjustment completes, the screen returns to the High voltage adjustment mode menu screen.
6. Press the RETURN key in the High voltage Adjustment mode menu Screen to return to the Process adjustment mode menu Screen.

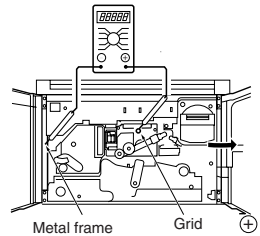
1. **Charging main manual adjustment**
   Charging main manual adjustment is inhibited in the field.
2. **Transfer manual adjustment**
   Default setting value must be set under the guidance of Minolta's Product & Technical Support Division.
3. **Separation (AC) manual adjustment**
   Default setting value must be set under the guidance of Minolta's Product & Technical Support Division.
4. **Separation (DC) manual adjustment**
   Default setting value must be set under the guidance of Minolta's Product & Technical Support Division.
5. **Charging grid manual adjustment**
   See [3] "Charging Grid Voltage Adjustment".
6. **Developing bias manual adjustment**
   Default setting value must be set under the guidance of Minolta's Product & Technical Support Division.
7. **Transfer guide confirm**
   Transfer guide confirm is inhibited in the field.
8. **TGR manual adjustment**
   TGR manual adjustment is inhibited in the field.

[3] Charging Grid Voltage Adjustment

Adjusting the charging grid voltage. Before performing this adjustment, Check that the drum counter was reset.

Step	Operation
1	Check the adjustment value of the charging grid voltage on the durm flange.
2	Connect the V tester as shown below. +: Grid pin -: GND (Earth) Range: DC1000 V
3	Enter the 36 mode.
4	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
5	**[Process adjustment mode menu Screen]** Press " 1 High voltage adjustment".
6	**[High voltage adjustment mode menu Screen]** Press " 5 HV adj. (Charging grid voltage)".
7	**[HV adjustment (Charging grid voltage) Screen]** Press START button , and check the voltage shown, then press CANCEL button.
8	When the voltage measured is not satisfactory, change the data using the numeric keys on the screen and press the SET key.
9	Turn the SW2 (sub power) OFF.

Standard value: Specified value on the drum flange ±5 V
Range of input: 0 to 255
1 step: 1.6 V



[4] Drum Peculiarity Adjustment

Adjusting the blade set, maximum density (Dmax), dot diameter, laser offset and gamma.

1. Select " [1] Process adjustment" in the Adjustment mode menu Screen to display the Process adjustment mode menu Screen.
2. Press " [2] Drum peculiarity adjustment" in the Process adjustment mode menu Screen to display the Drum peculiarity adjustment mode menu Screen.
3. Drum Peculiarity Adjustment consists of the following:
   - [1] Blade setting mode
   - [2] Auto maximum density adj.
   - [3] Auto dot diameter adjustment
   - [4] LD1 offset adjustment
   - [5] LD2 offset adjustment
   - [6] LD1 bias adjustment
   - [7] LD2 bias adjustment
   - [8] Auto gamma adjustment (1 dot)
   - [9] Auto gamma adjustment (2 dot)
   - [10] Cartridge set mode
4. Press the number key corresponding to the item to be adjusted.
   The adjustment screen of the selected item is displayed.
5. When adjustment completes, the screen returns to the Drum peculiarity adjustment mode menu Screen.
6. Press the [RETURN] key in the Drum peculiarity adjustment mode menu Screen to return to the Process adjustment mode menu Screen.

1. Blade setting mode

In this mode, toner stuck on the drum surface during replacement of the cleaning blade or drum is removed to prevent damage to the drum and cleaning blade.

Preparation: Be sure the drum unit is set.
Apply setting powder to all the surface of the drum.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " [1] Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " [2] Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " [1] Blade setting mode".
5	**[Blade setting mode Screen]** Press the [Start] key. Adjustment completes in about 1 second and a complete message is displayed.
6	Press the [RETURN] key to return to the Drum peculiarity adjustment mode menu Screen.

2. Auto maximum density adjustment (Dmax adjustment)

Automatically adjusting the maximum density (Dmax). This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set and developer is in the developing unit.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " (1) Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " (2) Drum peculiarity adjustment.".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " (2) Auto maximum density adj.".
5	**[Auto maximum density adjustment Screen]** Press the (Start) key. The maximum density (Dmax) is adjusted automatically. Adjustment completes in about 15 seconds and an complete message is displayed.
6	Press the (RETURN) key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

If any one of the following error messages appears during auto maximum density adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto maximum density adjustment.

<1> Error 1: The Dmax sensor dirt correction has been corrected.

<2>Error 2: Maximum density adjustment is not complete when the number of rotation of developing sleeve reaches the specified value.

<3>Error 3: No signal is output from the Dmax sensor. No control patch is output.

3. Auto dot diameter adjustment

Automatically adjusting the dot diameter.
This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set and developer is in the developing unit. Auto maximum density adjustment must have been completed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " (1) Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " (2) Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " (3) Auto dot diameter adjustment".
5	**[Auto dot diameter adjustment Screen]** Press the (Start) key. The dot diameter is adjusted automatically. Adjustment completes in about 10 seconds and a complete message is displayed.
6	Press the (RETURN) key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

If either of the following error messages appears during auto dot diameter adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto dot diameter adjustment.

<1> Error 1: The γ sensor dirt correction has been corrected.

<2>Error 2: Auto dot diameter adjustment has ended with an abnormal value.

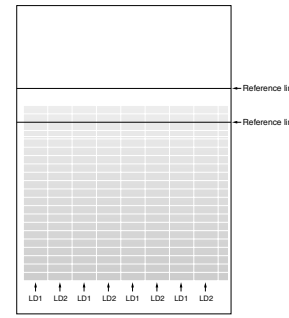
4. LD1 offset adjustment

This adjusts the place at which LD1 laser starts writing.

This adjustment should be performed when the drum or developer is replaced. The adjustment is performed at line speed of 320, 280 and 185 respectively.

Be sure the drum unit is set.

Auto maximum density adjustment and auto dot diameter adjustment must have been completed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " (1) Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " (2) Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " (4) LD1 offset adjustment".
5	**[LD1 offset adjustment Screen]** Press any key of (LS320), (LS280), or (LS185).
6	Press the (COPY SCREEN) key.
7	Select A3 size paper and press the START button to output the test pattern.
8	Check the test pattern. **Specification:** Check if two output patterns from laser are consistent and the beginning of the lower density part is aligned between the two lines as illustrated below. 
9	If the specification is not satisfied, press the C button while pressing the Utility key.
10	**[LD1 offset adjustment Screen]** Enter an offset value using the numeric keys and press the (SET) key. Setting range: -128 to +127
11	Repeat steps 6 to 10 until the specification is satisfied.
12	Press the (RETURN) key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

Select (LS320) to adjust in normal mode (line speed 320mm/sec.), (LS280) to adjust in postcard mode (280mm/sec.) (Japan only), or (LS185) to adjust in thick paper mode (185mm/sec.).

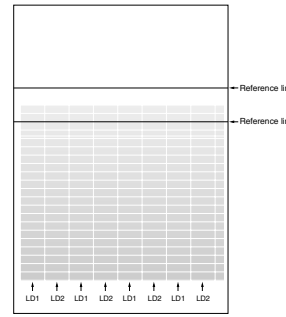
5. LD2 offset adjustment

This adjusts the place at which LD2 laser starts writing.

This adjustment should be performed when the drum or developer is replaced. The adjustment is performed at line speed of 320, 280 and 185 respectively.

Be sure the drum unit is set.

Auto maximum density adjustment, auto dot diameter adjustment, and LD1 offset adjustment must have been completed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " 2 Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " 5 LD2 offset adjustment".
5	**[LD2 offset adjustment Screen]** Press any key of LS320 , LS280 , or LS185 .
6	Press the COPY SCREEN key.
7	Select A3 size paper and press the START button to output the test pattern.
8	Check the test pattern. **Specification:** Check if two output patterns from laser are consistent and the beginning of the lower density part is aligned between the two lines as illustrated below. 
9	If the specification is not satisfied, press the C button while pressing the Utility key.
10	**[LD2 offset adjustment Screen]** Enter an offset value using the numeric keys and press the SET key. Setting range: -128 to +127
11	Repeat steps 6 to 10 until the specification is satisfied.
12	Press the RETURN key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

Select LS320 to adjust in normal mode (line speed 320mm/sec.), LS280 to adjust in postcard mode (280mm/sec.) (Japan only), or LS185 to adjust in thick paper mode (185mm/sec.).

6. LD1 bias adjustment

LD1 bias adjustment is inhibited in the field.

7. LD1 bias adjustment

LD1 bias adjustment is inhibited in the field.

8. Auto gamma adjustment (1 dot)

Performs gamma adjustment (1 dot) automatically.

This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set. Auto maximum density adjustment, auto dot diameter adjustment, LD1 offset adjustment and, LD2 offset adjustment must have been completed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " 2 Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " 8 Auto gamma adjustment (1 dot)".
5	**[Auto gamma adjustment (1 dot) Screen]** Press the Start key. The drum and developer operate to automatically adjust Gamma. Adjustment completes in about 10 seconds and a complete message is displayed.
6	Press the RETURN key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

If any one of the following error messages appears during auto gamma adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto gamma adjustment.

<1>Error 1: The γ sensor dirt correction has been corrected.

<2>Error 2: No signal is output from the γ sensor. No control patch is output.

<3>Error 3: A recurrence error occurred during γ curve calculation.

9. Auto gamma adjustment (2 dot)

Performs gamma adjustment (2 dot) automatically. This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set. Auto maximum density adjustment, auto dot diameter adjustment, LD1 offset adjustment , LD2 offset adjustment, and auto gamma adjustment (1 dot) must have been completed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " 2 Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " 9 Auto gamma adjustment (2 dot)".
5	**[Auto gamma adjustment (2 dot) Screen]** Press the Start key. The drum and developer operate to automatically adjust Gamma. Adjustment completes in about 10 seconds and an complete message is displayed.
6	Press the RETURN key to return to the Drum peculiarity adjustment mode menu Screen.

Reference:

If any one of the following error messages appears during auto gamma adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto gamma adjustment.

<1>Error 1: The γ sensor dirt correction has been corrected.

<2>Error 2: No signal is output from the γ sensor. No control patch is output.

<3>Error 3: A recurrence error occurred during γ curve calculation.

10. Cartridge set mode

This adjustment should be performed when blank dots appears on the copy after the drum removing and installing.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
3	**[Process adjustment mode menu Screen]** Press " 2 Drum peculiarity adjustment".
4	**[Drum peculiarity adjustment mode menu Screen]** Press " 10 Cartridge set mode".
5	**[Cartridge set mode Screen]** Press the Start key.
6	The developing unit and the drum rotate for two mintes, and return to Cartridge set mode Screen.
7	Press the COPY SCREEN key.
8	Select the wide paper (ie A3, A4, 11x17, 8.5x11) in the direction of the drum shaft, set 10 copies, and press START button.
9	If black dots still appear, press the C button while pressing the Utility key to return to the cartridge set mode, and repeat the step 5 to 8.
10	Press the C button while pressing Utility key when black dots disappear.
11	Press RETURN key to return to the Drum peculiarity adjustment mode menu Screen.

[5] Drum Peculiarity Adjustment (Manual)

1. Maxiumum density manual adjustment

This adjustment must be performed under the guidance of Minolta's Product & Technical Support Division.

Variable range: 0 to 41

2. Dot diameter manual adjustment

This adjustment must be performed under the guidance of Minolta's Product & Technical Support Division.

Variable range: 0 to 255

[6] User Paper Setting

This adjustment is only performed when the user uses special copy paper and can not be adjusted using the standard adjustment process.

This setting is applied when "User" is selected for "Paper type/Special size setting" in the key operator mode or when "User paper" is selected for "Transfer/separation output for plain paper" or "recycled paper" in 25 mode DIPSW.

The data for 64 g/m^2 plain paper" is input as the default.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 1 Process adjustment".
3	**[Process adjustment mode menu Screen]** Select " 4 User paper setting".
4	Transfer/separation output screen appears. Enter data according to the user specified paper. Data should be input under the guidance of Minolta's Product & Technical Support Division.

[7] Recall Standard Data (Process Adjustment)

Restoring process adjustment settings to standard values (factory setting data).

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " (1) Process adjustment".
3	**[Process adjustment mode menu Screen]** Select " (5) Recall standard data".
4	**[Recall standard data Screen]** Press the (YES) key. Various data is restored to standard values.
5	Press the (RETURN) key to return to the Process adjustment Screen.

[8] Tray Adjustment

This adjustment should be performed when the tray or by-pass unit is replaced.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menun Screen]** Press " (2) Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " (1) Tray adjustment".
4	**[Tray adjustment Screen]** Press the (NEXT) or (BACK) key to select the tray to be adjusted. The screen changes from Tray 1 to Tray 2 to Tray 3 to By-pass tray 1 to By-pass tray 2. Using a scale, perform each adjustment individually, set the distance between (the inner surfaces of) the paper side guide plates of each tray to 210mm (A4R) . Set the distance between (the inner surfaces of) the paper side guide plates of by-pass tray 1 to 210mm (A4R) and tray 2 to 280mm (8.5 × 11) respectively.Various data is restored to standard values.
5	Press the (Start) key. The selected tray is automatically adjusted. After adjustment completes, a message is displayed.
6	Press the (RETURN) key.

[9] Magnification Adjustment

Adjusting the printer and copy vertical and horizontal magnifications.

1. Select " 2 Image adjustment" in the Adjustment mode menu Screen to display the Image adjustment mode menu Screen.
2. Press " 2 Magnification adjustment" in the Image adjustment mode menu Screen to display the Magnification adjustment mode menu Screen.
3. Magnification adjustment consists of the following:

   1 Printer drum clock adjustment

   2 Printer horizontal adjustment

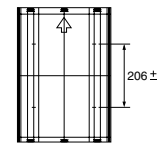
   3 Scanner drum clock adjustment

   4 RADF drum clock adjustment
4. Press the number key corresponding to the item to be adjusted.
5. After adjustment completes, return to the Magnification adjustment menu Screen.
6. Press the RETURN key on the Magnification adjustment menu Screen to return to the Image adjustment mode menu Screen.

Caution: Check and adjust the printer vertical magnification adjustment during maintenance. Also adjust the printer restart timing because it changes with the printer vertical magnification adjustment

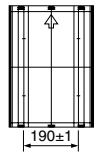
1. Printer drum clock magnification adjustment

Adjusting the printer vertical magnification.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 2 Magnification adjustment".
4	**[Magnification adjustment mode menu Screen]** Press " 1 Printer drum clock adjustment".
5	**[Printer drum clock adjustment Screen]** Press the COPY SCREEN key.
6	Select A3 size paper and press the START button to output the test pattern (No.16).
7	Measure the vertical magnification with a ruler. Specification: ± 0.5% or less (100% magnification) Within ± 1mm with respect to 206mm. 
8	If the specification is not satisfied, press the C button while pressing the Utility key.
9	**[Printer drum clock adjustment Screen]** Enter a value using the numeric keys and press the SET key. Setting range: -27 to +100 1 step=0.05%
10	Repeat steps 5 to 9 until the specification is satisfied.
11	Press the RETURN key to return to the Magnification adjustment mode menu Screen.

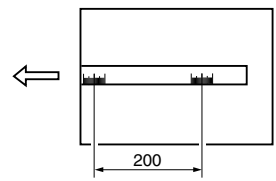
2. Printer horizontal magnification adjustment

Adjusting the horizontal magnification.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 2 Magnification adjustment".
4	**[Magnification adjustment mode menu Screen]** Press " 2 Printer horizontal magnification adjustment".
5	**[Printer horizontal adjustment Screen]** Press the COPY SCREEN key.
6	Select A3 size paper and press the START button to output the test pattern (No.16).
7	Measure the horizontal magnification with a ruler. Specification: ± 0.5% or less (100% magnification) Within± 1mm with respect to 190mm. 
8	If the specification is not satisfied, press the C button while pressing the Utility key.
9	**[Printer horizontal adjustment Screen]** Enter a value using the numeric keys and press the SET key. Setting range: -10 to +10 1 step=0.1%
10	Repeat steps 5 to 9 until the specification is satisfied.
11	Press the RETURN key to return to the Magnification adjustment mode menu Screen.

3. Scanner (platen) drum clock magnification adjustment

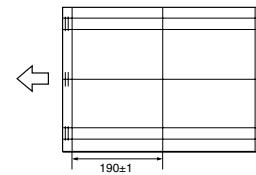
Adjusting the vertical magnification for the scanner.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 2 Magnification adjustment".
4	**[Magnification adjustment mode menu Screen]** Press " 3 Scanner drum clock adjustment".
5	**[Scanner (Platen) drum clock adjustment Screen]** Press the COPY SCREEN key.
6	Select A3 size paper, place a scale on the platen glass so that it runs parallel with the Original stopper plate rear, and press the START button.
7	Measure the vertical magnification with a ruler. Specification: ± 0.5% or less (100% magnification) Within ± 1mm with respect to 200 mm. 
8	If the specification is not satisfied, press the C button while pressing the Utility key.
9	**[Scanner (Platen) drum clock adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -40 to +40 1 step=0.05%
10	Repeat steps 5 to 9 until the specification is satisfied.

11	Press the [RETURN] key to return to the Magnification adjustment mode menu Screen.

4. Scanner (RADF) drum clock magnification adjustment

Adjusting the vertical magnification during RADF copy.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 2 Magnification adjustment".
4	**[Magnification adjustment mode menu Screen]** Press " 4 RADF drum clock adjustment".
5	**[RADF drum clock adjustment Screen]** Press the [NEXT] or [BACK] key to select the magnification to be adjusted. The screen rotates from 100% to 50% to 200% to 400%.
6	Press the [COPY SCREEN] key.
7	Select A3 size paper, set an adjustment chart on RADF, and press the START button.
8	Measure the vertical magnification with a ruler. Specification: ± 0.5% or less (100% magnification) Within ± 1mm with respect to 190mm. 
9	If the specification is not satisfied, press the C button while pressing the Utility key.

10	**[RADF drum clock adjustment Screen]** Enter a value with the numeric keys and press the [SET] key. Setting range: -40 to +40 1 step=0.05%
11	Repeat steps 5 to 11 until the specification is satisfied.
12	Press the [BACK] key to return to the Magnification adjustment mode menu Screen.

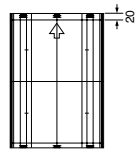
[10] Timing Adjustment

Adjusting the leading edge timing (paper feed restart timing), registration loop amount, and leading edge erasure amount.

1. Select [2] Image adjustment in the Adjustment mode menu Screen to display the Image adjustment mode menu Screen.
2. Press "[3] Timing adjustment" in the Image adjustment mode menu Screen to display the Timing adjustment mode menu Screen.
3. Timing adjustment consists of the following adjustments:
   - [1] Printer restart timing adj.
   - [2] Printer regist loop adjustment
   - [3] Printer pre-registration adjustment
   - [4] Printer lead edge timing adj.
   - [5] Scanner restart timing adj.
   - [6] RADF restart timing adjustment
   - [7] RADF regist loop adjustment
4. Press the number key corresponding to the item to be adjusted.
   The adjustment screen of the selected item appears.
5. After adjustment completes, return to the Timing adjustment mode menu Screen.
6. Press the [RETURN] key in the Timing adjustment mode menu Screen to return to the Image adjustment mode menu Screen.

1. Printer restart timing adjustment

This adjusts the printer restart timing (paper feed timing). The adjustment is performed at line speed of 320, 280 and 185 respectively.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 1 Printer restart timing adj".
5	**[Printer restart timing adj. Screen]** Press any key of LS320, LS280, or LS185.
6	Press the COPY SCREEN key.
7	Select A3-size paper and press the START button to output the test pattern (No.16).
8	Check the leading edge detection timing. Specification: 20mm+1.0mm 0mm 
9	If the specification is not satisfied, press the C button while pressing the Utility key.
10	**[Printer restart timing adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -30 to +60 1 step=0.1mm
11	Repeat steps 5 to 10 until the specification is satisfied.
12	Press the RETURN key to return to the Timing adjustment mode menu Screen.

2. Printer registration loop adjustment

Adjusting the printer registration loop amount for trays (tray 1, 2 and 3), by-pass tray, and ADU.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 2 Printer regist loop adjustment".
5	**[Printer regist loop adj Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen changes from Tray to By-pass tray to ADU.
6	Press the COPY SCREEN key.
7	Press the START button to make a copy.
8	Check the printer registration loop amount.
9	If the printer registration loop amount is not appropriate, press the C button while pressing the Utility key.
10	**[Printer regist loop adj. Screen]** Enter a value with the numeric keys and press the SET key. • Tray (tray 1, 2, 3 and LCT) Setting range: -5 to +5 1 step=2ms • By-pass tray Setting range: -10 to +10 1 step=2ms • ADU Setting range: -10 to +10 1 step=2ms
11	Repeat steps 5 to 10 until the printer registration loop amount is appropriate.
12	Press the RETURN key to return to the Timing adjustment mode menu Screen.

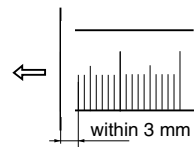
3. Printer pre-registration amount adjustment

Adjusting the pre-registration loop amount for trays 1, 2, 3, LCT and ADU.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 3 Printer pre-registration adjustment".
5	**[Printer pre-regist adj. Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen changes from Tray 1 to Tray 2 to Tray 3 to LCT to ADU.
6	Press the COPY SCREEN key.
7	Press the START button to make a copy.
8	Check the printer pre-registration loop amount.
9	If the printer pre-registration loop amount is not appropriate, press the C button while pressing the Utility key.
10	**[Printer pre-regist adj. Screen]** Enter a value with the numeric keys and press the SET key. • Tray (tray 1, 2, 3 and LCT Setting range: -5 to +5 1 step=2ms • ADU Setting range: -10 to +10 1 step=2ms
11	Repeat steps 5 to 10 until the printer pre-registration loop amount is appropriate.
12	Press the RETURN key to return to the Timing adjustment mode menu Screen.

4. Printer leading edge timing adjustment

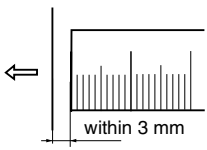
Adjusting the printer leading edge timing (image erasure amount).

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 4 Printer lead edge timing adjustment".
5	**[Printer lead edge timing adjustment Screen]** Press the COPY SCREEN key.
6	Select A3 size paper, place a scale on the platen glass so that it leading edge is aligned Original stopper plate left, and press the START button.
7	Check the printer leading edge erasure amount. Specification: Within 3mm 
8	If the printer leading edge erasure amount is not appropriate, press the C button while pressing the Utility key.
9	**[Printer lead edge timing adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -20 to +40 1 step=0.1mm
10	Repeat steps 5 to 10 until the printer leading edge erasure amount is within specification.
11	Press the RETURN key to return to the Timing adjustment mode menu Screen.

5. Scanner (platen) restart timing adjustment

Adjusting the scanner restart timing during platen copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 5 Scanner restart timing adj.".
5	**[Scanner (platen) restart timing adj. Screen]** Press the COPY SCREEN key.
6	Select A3-size paper, place a scale on the platen glass so that it leading edge is aligned Original stopper plate left, and press the START button.
7	Check the restart timing. Specification: Within 3 mm 
8	If the leading edge timing is not appropriate, press the C button while pressing the Utility key.
9	**[Scanner (platen) restart timing adj. Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -60 to +20 1 step=0.1mm
10	Repeat steps 5 to 10 until the leading edge timing is within specification.
11	Press the RETURN key to return to the Timing adjustment mode menu Screen.

6. RADF restart timing adjustment

Adjusting the scanner leading edge timing during RADF copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 6 RADF restart timing adjustment".
5	**[RADF restart timing adj. Screen]** Press the COPY SCREEN key and then switch to double sided /single sided copy mode.
6	Select A3 size paper, set an adjustment chart on RADF, and press the START button.
7	Check the leading edge timing on front and back side. Specification: Within 3mm
8	If the restart timing is not appropriate, press the C button while pressing the Utility key.
9	**[RADF restart timing adj. Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen changes from single side to double-side (front), to double side (back) copy.
10	Enter a value with the numeric keys and press the SET key. Setting range: -60 to +50 1 step=0.1mm
11	Repeat steps 5 to 10 until the leading edge timing is within specification.
12	Press the RETURN key to return to the Timing adjustment mode menu Screen.

7. RADF registration loop amount adjustment

Adjusting the registration loop amount during RADF copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 3 Timing adjustment".
4	**[Timing adjustment mode menu Screen]** Press " 7 RADF regist loop adjustment".
5	**[RADF regist loop adjustment Screen]** Press the COPY SCREEN key and then switch to double-sided / single-sided copy mode.
6	Select A3 size paper, set an adjustment chart on RADF, and press the START button.
7	Check the loop amounts on the front and back side.
8	If the registration loop amount is not appropriate, press the C button while pressing the Utility key.
9	**[RADF regist loop adjustment Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen changes from single sided to double sided (front) to double sided (back), to double sided pre-registration.
10	Enter a value with the numeric keys and press the SET key. Setting range: -10 to +10 1 step=0.5mm
11	Repeat steps 5 to 11 until the registration loop amount is within specification.
12	Press the RETURN key to return to the Timing adjustment mode menu screen.

[11] RADF Adjustment

Performing RADF density adjustment, RADF original size adjustment and RADF skew offset adjustment.

1. Select 2 Image adjustment in the Adjustment mode menu Screen to display the Image adjustment mode menu Screen.
2. Press 4 RADF adjustment in the Image adjustment mode menu Screen and display the RADF adjustment mode menu Screen.
3. RADF adjustment consists of the following items:
   1 RADF density adjustment
   2 RADF original size adjustment
   3 RADF Incline offset adjustment
4. Press the number key corresponding to the item to be adjusted.
   The adjustment screen of the selected item appears.
5. After adjustment completes, return to the RADF adjustment mode menu Screen.
6. Press the RETURN key in the RADF adjustment mode menu Screen to return to the Image adjustment mode menu Screen.

1. RADF density adjustment

When the original reader slit glass is replaced, the density when reading originals with the RADF must be adjusted.

Preparation: Wipe the original reader slit glass clean. Check that the white chart is not dirty or folded.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 4 RADF adjustment".
4	**[RADF adjustment mode menu Screen]** Press " 1 RADF density adjustment".
5	**[RADF density adjustment Screen]** Set white chart on RADF (Caution 1).
6	Press the Start key. RADF density is adjusted automatically. When adjustment completes, a message appears on the screen.
7	If an error message is displayed, repeat steps 5 and 6 (Caution 2).
8	Press the RETURN key to return to the RADF adjustment mode menu Screen.

Caution1: Be sure to set the white chart in A4 orientation.

Caution2: If the error message appears repeatedly, there is a possibility of scanner system mechanical, optical, or electrical adjustment error or parts defect.

2. RADF original size adjustment

Perform this adjustment when the RADF original size detection does not operate properly or when replacing the Printer control board.

Caution: RADF original size adjustment consists of A4 and B6R. Use the NEXT or BACK key to select the desired adjustment item.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 4 RADF adjustment".
4	**[RADF adjustment mode menu Screen]** Press " 2 RADF original size adjustment".
5	**[RADF original size adj. Screen]** Press the NEXT or BACK key to select original size to adjust. The screen changes between A4 to A5R.
6	Set the original of the selected size on RADF and press the Start key. RADF original size is adjusted automatically.
7	Repeat steps 5 and 6 and adjust both sizes.
8	Press the RETURN key to return to the RADF adjustment mode menu Screen.

3. RADF incline offset adjustment

Perform this adjustment when replacing the Printer control board.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 4 RADF adjustment".
4	**[RADF adjustment mode menu Screen]** Press " 3 RADF Incline offset adjustment".
5	**[RADF Incline offset adjustment Screen]** Press the COPY SCREEN key.
6	Select A3 size paper, set an adjustment chart on RADF, and press the START button.
7	Check the RADF skew offset amount. Specification: 0.5%
8	If the RADF incline offset amount is not appropriate, press the C button while pressing the Utility key.
9	**[RADF Incline offset adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -60 to +60 1 step=0.05%
10	If the RADF skew offset amount is not within specification, repeat steps 5 to 9.
11	Press the RETURN key to return to the RADF adjustment mode menu Screen.

[12] Centring Adjustment

Perform this adjustment to centre the image in a direction perpendicular to the paper feed direction.

1. Select " 2 Image adjustment" in the Adjustment mode menu Screen to display the Image adjustment mode menu Screen.
2. Press " 5 Centring adjustment" in the Image adjustment mode menu Screen to display the Centring adjustment menu screen.
3. Centring adjustment consists of the following:
   1 Printer centring adjustment
   2 Scanner centring adjustment
   3 RADF centring adjustment
4. Press the number key corresponding to the item to be adjusted.
   The adjustment screen of the selected item appears.
5. After adjustment completes, return to the Centring adjustment menu Screen.
6. Press the RETURN key in the Centring adjustment menu screen to return to the Image adjustment mode menu Screen.

1. Printer Centring Adjustment

Adjusting the printer centring.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 5 Centring adjustment".
4	**[Centring adjustment mode menu Screen]** Press " 1 Printer centring adjustment".
5	**[Printer centring adjustment Screen]** Press the COPY SCREEN key.
6	Select A3-size paper and press the START button to output the test pattern (No.16).
7	Fold A3 size paper in half in the short edge (landscape) orientation and check whether the lines on the left and right overlap completely. Specification: ± 1mm or less
8	If the printed image is not appropriate, press the C button while pressing the Utility key.
9	**[Printer centring adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -64 to +63 1 step=0.1mm
10	Repeat steps 5 to 9 until the offset is within specification.
11	Press the RETURN key to return to the Centring adjustment mode menu Screen.

2. Scanner (platen) centring adjustment

Adjusting the scanner (platen) centring.

Preparation: Printer centring adjustment must be completed before performing this adjustment.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 5 Centring adjustment".
4	**[Centring adjustment mode menu Screen]** Press " 2 Scanner centring adjustment".
5	**[Scanner (Platen) centring adjustment Screen]** Press the COPY SCREEN key.
6	Select A3-size paper, set a test chart GTC-003 or 004 on the original glass, and press the START button.
7	Fold A3 size paper in half in the short edge (landscape) orientation and check whether the lines on the left and right overlap completely. Specification: ± 2mm
8	If the offset is not within specification, press the C button while pressing the Utility key.
9	**[Scanner (Platen) centring adjustment Screen]** Enter a value with the numeric keys and press the SET key. Setting range: -30 to +30 1 step=0.1mm
10	Repeat steps 5 to 9 until the offset is within specification.
11	Press the RETURN key to return to the Centring adjustment mode menu Screen.

3. RADF centring adjustment

This adjusts centring for the RADF copy.
There are six adjustment items as follows:

- Single sided small size
- Double sided (front) small size
- Double sided (back) small size
- Single sided large size
- Double sided (front) large size
- Double sided (back) large size

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 5 Centring adjustment".
4	**[Centring adjustment mode menu Screen]** Press " 3 RADF centring adjustment".
5	**[RADF centring adj. Screen]** Press the COPY SCREEN key and enter double sided / single sided copy mode.
6	Load A3 size paper in the tray, place small size or large size original on RADF, and press the START button.
7	Fold A3 size paper in half in the short edge (landscape) orientation and check whether the lines on the left and right overlap completely. Specification: ± 1mm
8	If the offset is not within specification, press the C button while pressing the Utility key.
9	**[RADF centring adj. Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen changes from single sided small size to double sided (front) small size to double sided (back) small size to single sided large size to double sided (front) large size to double sided (back) large size.
10	Enter a value with the numeric keys and press the SET key. Setting range: -30 to +30 1 step=0.1mm
11	Repeat steps 5 to 10 until the centering is within specification.
12	Press the RETURN key to return to the Centring adjustment mode menu Screen.

[13] Distortion adjustment (Copier)

This is to correct distortion during platen/RADF copying. There are four adjustment items as follows:

- Scanner (platen) distortion (main scan)
- Scanner (platen) distortion (sub-scan)
- Scanner (RADF) distortion (main scan)
- Scanner (RADF) distortion (sub-scan)

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Press " 6 Warp adjustment (Copier)".
4	**[Scanner warp adj. Screen]** Press the COPY SCREEN key.
5	Select A3 size paper. To check the platen, set an adjustment chart on the original glass. To check RADF, set it on RADF.
6	Check for platen copy distortion or RADF copy distortion. Specification: The difference in lengths of two diagonals of a 200mm square must be within 1.4mm.
7	If the platen copy distortion or RADF copy distortion is not within specification, press the Utility key while pressing the Utility key.
8	**[Scanner warp Adj. Screen]** Press the NEXT or BACK key to select the desired adjustment item.
9	Enter a value with the numeric keys and press the SET key. Range of setting: -50 to +50 1 step=0.05%
10	Repeat steps 6 to 9 until the distortion is within specification.
11	Press the RETURN key to return to the Image adjustment mode menu Screen.

[14] Non-image area erase check

When this machine is installed in a place or is moved to another location, research should be conducted on the conditions under which the machine is placed.

Preparation: RADF must be opened.
Nothing should be put on the original glass. The original glass must be clean and transparent.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 7 Non-image area erase check".
4	**[Non-image area erase check Screen]** Open the RADF, and press the Start key.
5	Confirm that a message indicating that it operated normally is displayed in the message display. When a message indicating it did not operate properly is displayed, refer to Reference 1 shown below. Then, perform the non-original automatic erasure installation research again.

Reference 1:

Here are measures to be taken when the following error messages are indicated.

<Error message 1>

Adjust for Extreme Brightness. In many cases, the Non-image-area-erase function will not operate correctly. Please confirm "adjustment" - "36 mode" columns of the Service Hand book.

<Countermeasure1>

If you use the non-original erasure function, or copy originals that have a dark background using the non-original erasure method, relatively infrequently, use the machine in its present installation environment.

If, however, you copy originals that have a dark background fairly frequently, re-install the

machine in a dark location and facing a direction such that external light does not get into it, then carry out the installation survey once again.
<Error message2>
A datum with potentioal not to function non-image-area-erase is found.
Please confirm "adjustment" - "36 mode" colums of the Service Hand book.
<Countermeasure2>
If you use the non-original erasure function relatively infrequently, you can use the machine in its present installation environment.
If, however, you copy originals that have a dark background fairly frequently, re-install the machine in a dark location and facing a direction such that external light does not get into it, then carry out the installation survey once again. In this case, if there is a bright light source, such as a fluorescent light, directly above the machine, reconsider the installation location and direction, or take steps to block off the light from the light source (by using a cover, for example), then carry out the installation survey once again.

[15] Recall standard data (Image adjustment)

Restoring image adjustment settings to standard values (factory setting data).

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 2 Image adjustment".
3	**[Image adjustment mode menu Screen]** Select " 8 Recall standard data".
4	**[Recall standard data Screen]** Press the YES key. Various data is restored to standard values.
5	Press the RETURN key to return to the Image adjustment mode menu Screen.

[16] Running Test Mode

Testing continuous copy operation.

Select " 3 Running test mode" in the Adjustment mode menu Screen.
This adjustment consists of the following items:

1 Intermittent copy mode

In this mode, the machine goes into the copy ready state after completing a set number of copy operations, waits 0.5 sec, and then repeats the same operation.

2 Paperless running mode

In this mode, the machine goes into the copy ready state after completing a set number of copy operations without performing paper detection or jam detection, waits 0.5 sec, and then repeats the same operation.

3 Paperless mode

In this mode, the machine makes a set number of copies at approximately the same timing as for normal copy without performing paper detection or jam detection.

4 Paperless endless mode

In this mode, the machine makes copies at approximately the same timing as for normal copy without performing paper detection or jam detection. The copy quantity is set to infinity automatically.

5 Running mode

This mode consists of Paperless mode with repetitive scanner scan and auto paper feed tray change.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 3 Running test mode".
3	**[Running test mode menu Screen]** Press mode keys 1 to 5 .
4	**[Copy Screen]** Press the START button.
5	Check the copy operation and then press the STOP button to stop.
6	Turn the SW2 (sub power) OFF.

[17] Test pattern output mode

Output test pattern.

Select " 4 Test pattern output mode" in the Adjustment mode menu Screen to display the Test pattern output mode screen.

Caution: Do not touch any mode that is not specifically described.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 4 Test pattern output mode".
3	**[Test pattern output mode Screen]** Use the numeric keys to enter the number of the test pattern to output and press the SET key.
4	Press the COPY SCREEN key.
5	**[Copy Screen]** Select A3 size paper and press the START button to output the test pattern.
6	To output another test pattern, press the C button while pressing the Utility key and repeat steps 3 to 5.
7	Press the RETURN key to end.

No.1	Overall halftone

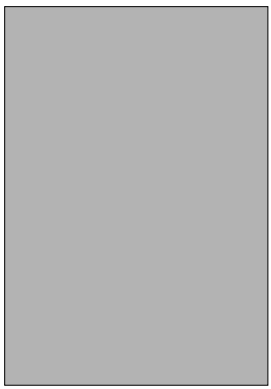
Check item

● When density is set to 70 (halftone)
If there are white stripes, black stripes, or uneven density, determine whether the fault is with the scanner or the printer.
● When density is set to 0 (white)
If the test pattern is gray background, determine whether the fault is with the scanner or the printer.
● When density is set to 255 (black)
If the density is light, determine whether the fault is with the scanner or the printer.

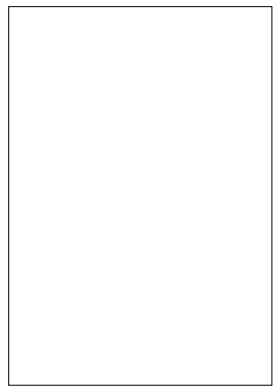
* The above density settings are typical values. See [18] "Test pattern density setting" for more information on density setting.

Test patterns

Density set to 70



Density set to 0



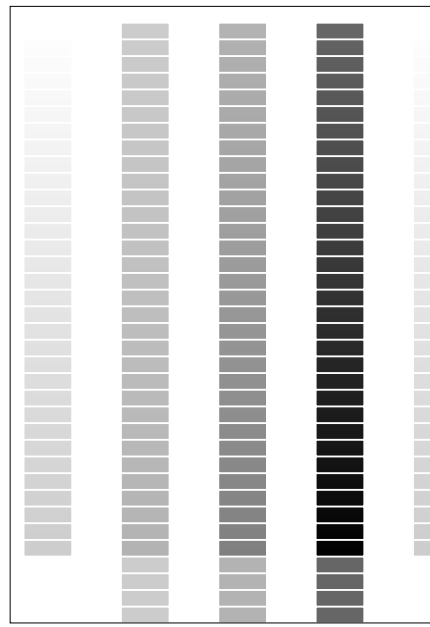
Density set to 255

No.2	Gradation pattern

Check item

If the test pattern is gray background or the density is light, determine whether the fault is with the processing system or with γ correction. If the copy image is abnormal despite this test pattern being normal, either the image processing system or the scanner system is abnormal.

Test patterns

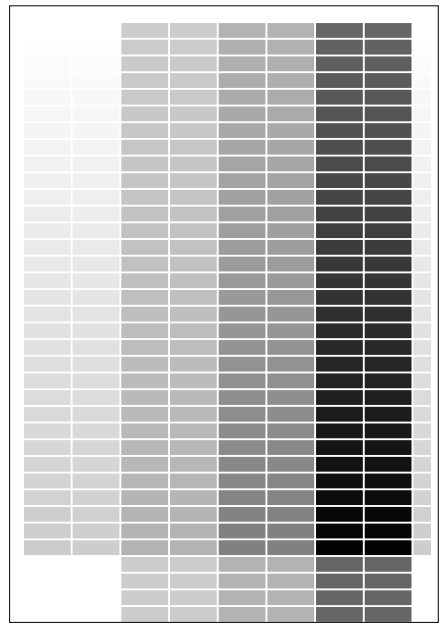


No.3	Gradation pattern

Check item

If the test pattern is abnormal, check whether the two lasers are emitting light normally.

Test patterns

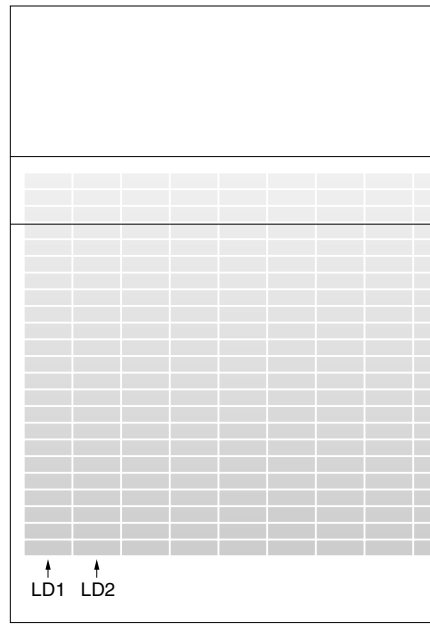


No.5	Gradation pattern

Check item

If the test pattern is abnormal, check whether the two laser outputs are uniform.

Test patterns

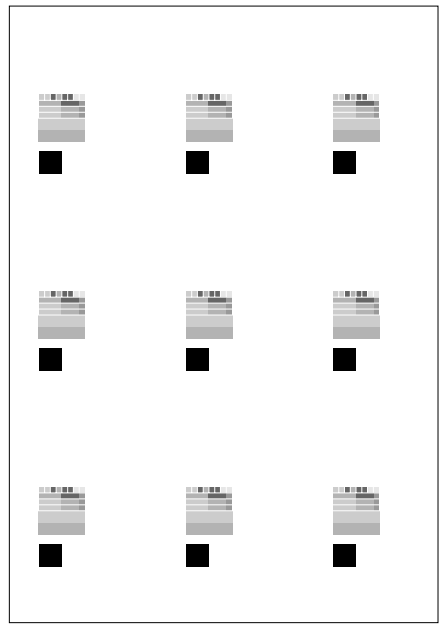


No.11	Beam misalignment check

Check item

If the test pattern is abnormal, check to see if position correction of the two laser beams is normal.

Test patterns



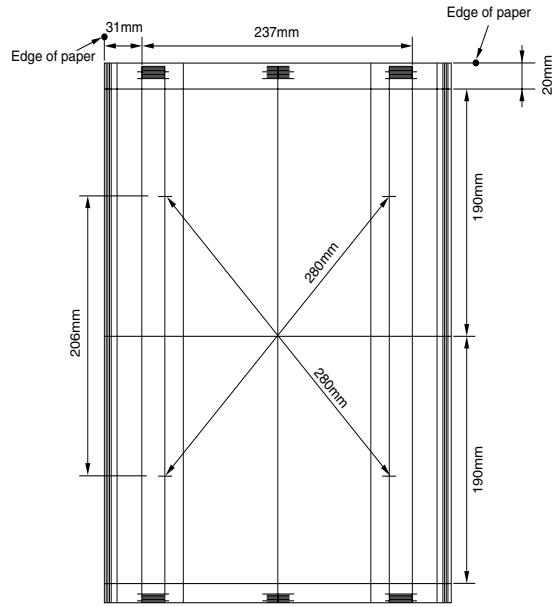
No.16	Linearity evaluation pattern

Check item

Use this check pattern to determine whether the fault is with the scanner or the printer. The printer horizontal magnification, vertical magnification, tilt, and leading edge timing and etc, can be checked. If the copy image is defective despite no abnormality in the test pattern, the scanner is at fault.

Note:
Loss of the image occurs in test pattern when printing on paper other than A3 paper.

Test patterns : Sample of A3 paper output



[18] Test pattern density setting

Setting the test pattern density.

Select " 5 Test pattern density setting" in the Adjustment mode menu Screen to display the Test pattern density setting Screen.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 5 Test pattern density setting".
3	**[Test pattern density Screen]** Use the numeric keys to enter the number of the test pattern to output and press the SET key. Setting range: 0 to 255
4	Press the COPY SCREEN key.
5	Press the START button to output a test pattern.
6	To output another test pattern, press the C button while pressing the Utility key and repeat steps 3 to 5.
7	Press the RETURN key to end.

[19] Finisher adjustment

Adjusting the finisher, cover sheet tray, and puncher.

1. Select " 6 Finisher adjustment" on the Adjustment mode menu Screen to display the Finisher adjustment mode menu Screen.
2. Finisher adjustment items are as follows:
   - 1 Stitch & Fold stopper adj.
   - 2 Fold stopper adjustment
   - 3 Cover sheet tray size adj.
   - 5 Punch adjustment
   - 7 Three-Fold position adj.
   - 8 2 positions staple pitch adj.
3. Press the number key corresponding to the item to be adjusted.
4. The adjustment screen for the selected adjustment item appears.
5. After adjustment completes, return to the Finisher adjustment mode menu Screen.
6. Press the RETURN key of the Finisher adjustment menu to return to the Adjustment mode menu Screen.

1. Stitch and fold stopper adjustment (FN-6 only)

Adjusting the stapling position when stitch and fold mode.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher adjustment mode menu Screen]** Press " 1 Stitch and fold stopper adj.".
4	**[Stitch and Fold stopper adj. Screen]** Press the COPY SCREEN key.
5	Set paper in the tray, set originals on RADF, and press the START button.
6	Check the paper center and stapling position. Specification: ± 1mm
7	If the stapling position is not within specification, press the C button while pressing the Utility key.
8	**[Stitch and Fold stopper adj. Screen]** Press the NEXT or BACK key to select a desired paper size.
9	Enter a value with numeric keys and press the SET key. Setting range: -128 to +127 1 step=0.1 mm
10	Repeat steps 4-9 until the stapling position is within specification.
11	Press the RETURN key to return to the Finisher adjustment mode menu Screen.

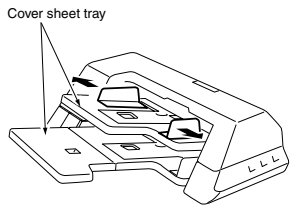
2. Folding stopper adjustment (FN-6 only)

Adjusting the folding position when stitch and fold or folding mode.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher adjustment mode menu Screen]** Press " 2 Fold stopper adjustment".
4	**[Fold stopper adjustment Screen]** Press the COPY SCREEN key.
5	Set paper in the tray, set originals on RADF, and press the START button.
6	Check the paper center and folding position. Specification: ± 1mm
7	If the folding position is not within specification, press the C button while pressing the Utility key.
8	**[Fold stopper adjustment Screen]** Press the NEXT or BACK key to select a desired paper size.
9	Enter a value with numeric keys and press the SET key. Setting range: -128 to +127 1 step=0.1 mm
10	Repeat steps 4-9 until the folding position is within specification.
11	Press the RETURN key to return to the Finisher adjustment mode menu Screen.

3. Cover sheet tray size adjustment (Cover Inserter B only)

This adjustment should be performed when the cover sheet tray size cannot be detected properly and when centring adjustment for cover sheet tray is performed.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher adjustment mode menu Screen]** Press " 3 Cover sheet tray size adjustment".
4	**[Cover sheet tray size adj. Screen]** Press NEXT or BACK key to select the tray to be adjusted.
5	Set a A4R size paper on the cover sheet tray (upper/lower), press the Start key on the LCD. A complete message appears on the screen. 
6	Press the RETURN key to return to the Finisher adjustment mode menu Screen.

4. Punch adjustment (PK-2 only)

This performs the punch horizontal positions and adjusts punch registration loop amount.

1. Select " 5 Punch adjustment" on the Finisher adjustment mode menu Screen to display the Punch adjustment menu Screen.
2. Punch adjustment includes the following items:
   1 Punch Horizontal position adj.
   2 Punch regist loop adjustment
3. Press the number key corresponding to the item to be adjusted. The adjustment screen for the selected adjustment item appears.
4. After adjustment completes, return to the Punch adjustment menu Screen.
5. Press the RETURN key of the Punch adjustment menu to return to the Finisher adjustment mode menu Screen.

(1) Punch horizontal position adjustment

Adjusting the punch horizontal position.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher adjustment mode menu Screen]** Press " 5 Punch adjustment".
4	**[Punch adjustment menu Screen]** Press " 1 Punch horizontal position adj.".
5	**[Punch Horizontal position adj.]** Press the COPY SCREEN key.
6	Load papers in the tray, place the original on RADF, and then press the START button.
7	If the punch horizontal position is not appropriate, press the C button while pressing down the Utility key.
8	**[Punch Horizontal position adj. Screen]** Press the NEXT or BACK key to select a desired paper size.
9	Enter a value with numeric keys and press the SET key. Setting range: -50 to +50 1 step=0.1 mm
10	Repeat steps 5-9 until the punched position is within the specification.
11	Press the RETURN key to return to the Punch adjustment menu Screen.

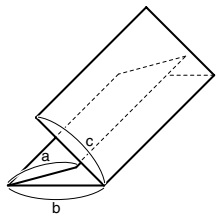
(2) Punch registration loop amount adjustment

Adjusting the registration loop amount for the reversed paper exit and the ADU paper exit (straight exit).

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher adjustment mode menu Screen]** Press " 5 Punch adjustment".
4	**[Punch adjustment mode Screen]** Press " 7 Punch registration loop amount adjustment".
5	**[Punch Regist Loop adj. Screen]** Press the NEXT or BACK key to select the item to be adjusted. The screen switches between the reversed paper exit and ADU paper exit.
6	Press the COPY SCREEN key.
7	Press the START button to make a copy.
8	Check the punch registration loop amount.
9	If the punch registration loop amount is not appropriate, press the C button while pressing the Utility key.
10	**[Punch Regist Loop Adj. Screen]** Enter a value with numeric keys and press the SET key. Setting range: -20 to +20 1 step=0.8 mm
11	Repeat steps 5-10 until the punch registration loop amount is within the specification.
12	Press the RETURN key to return to the Punch adjustment menu Screen.

5. Three-folding adjustment

Adjusting the folding positions during the three-folded copy.

Step	Operation
1	Enter the 36 mode.
2	**[Adjustment mode menu Screen]** Press " 6 Finisher adjustment".
3	**[Finisher Adjustment mode Menu Screen]** Press " 7 Three-holded positions adjustment".
4	**[Three-Folding adjustment Screen]** Press the COPY SCREEN key.
5	Load papers in the tray, place the original on RADF, and then press the START button.
6	Check the three-holded positions of paper. 
7	If the folded positions are not within the specification, press the C button while pressing the Utility key.
8	**[Three-Folding adjustment Screen]** Press the NEXT or BACK key to select the item to be adjusted.
9	Enter a value with numeric keys and press the SET key. Setting range: -128 to +127 1 step=0.1mm
10	Repeat steps 4-9 until the folded positions are within the specification.
11	Press the RETURN key to return to the Finisher adjustment mode menu Screen.

Folded positions	Reference value		Specification
	A4R	8.5x11R	
a	93mm	86.4mm	± 2mm
b	102mm	97mm	± 2mm
c	102mm	97mm	± 2mm

[20] List Output Mode

Outputting various data.

1. Select " 7 List output mode" in the Adjustment mode menu Screen to display the List output mode menu Screen.
2. List output mode menu consists of the following:
   - 1 Machine management list 1
   - 2 Adjustment data list
   - 3 Black ratio data list
   - 4 Machine management list 2
   - 5 Parameter list
   - 6 Memory dump list
   - 7 Font pattern
3. Press the number key corresponding to the item to output.
   The output setting screen for the selected item appears.
4. After output completes, return to the List output mode menu Screen.
5. Press the RETURN key in the List output mode menu Screen to return to Adjustment mode menu Screen.

Note: List output screen is not displayed for 4 Machine management list 2 and subsequent items unless address 30-1 is set to 1 with 1 Software DIPSW setting in 25 mode.

[21] Tandem initial setting

This identifies tandem connection.
For details on how to connect tandem, refer to the unpacking and installation procedure for the main body.

47 MODE

[1] 47 Mode / Multi Mode Setting Method

1. 47 Mode

This mode provides self-diagnostic functions (input/output check function) to check and adjust various signals and loads.

2. 47 mode operation

(1) Starting 47 mode

a. Turn off the SW2 (sub power).

b. Turn the SW2 back on while holding down 4 and 7 of the copy quantity button.

c. Check that the 47 mode is started when message "I/O check mode" appears in the first row of the message area.

(2) Input/output check

a. Use the copy quantity button to enter the code (Refer to the I/O check code list.) for the desired signal sources (such as sensors).

b. The entered code appears enclosed in <> in the second row of the message area.

c. The numbers are shifted left as they are displayed.

d. Check the status of the signal displayed as H or L after "IN:" in the second row of the message display area.

Caution: H and L indicate the level of the signal input to PRCB (printer control board). Note the relationship between the status of the input signal source and the message display.

(3) Output check

a. Use the copy quantity button to enter the code (Refer to the I/O check code list.) for the desired output load.

b. Press the Start button.
Depending on the output, a load will be activated or a signal will be output.

Start button	Code	Description
Before pressing indication	Input	Input signal level
After pressing	Output	Output load operation/signal

(4) Ending 47 mode

a. Press the stop button to cancel the operation.

b. Turn off the main switch to exit the 47 mode.

Step	Operation
1	Turn on the SW2 (sub power) while holding down 4 and 7 of the copy quantity button.
2	**[I/O check Screen]** Use the copy quantity button to enter the code.
3	Check the input signal check result displayed after "IN:" in the second row of the message area.
4	To perform the output check, press the Start button to check the output load.
5	Press the Stop button to end output check.
6	To perform other checks, enter a new code using the copy quantity button.
7	Turn off the main switch to exit the 47 mode.

Note1: No data appears on the second row of the message area when 47 mode is entered. Message appears when a number is entered.

Note2: Simply enter a new code to switch to another code.

Note3: A newly entered number is written over the previously entered number.

3. Multi mode

This machine features Multi modes amongst the 47 Mode functions.

This enables multiple I/O checks using a single I/O check code.

4. Multi mode operation method

Start the 47 mode and proceed as follows:

(1) To check the input

a. Using the copy quantity button, enter the check code for the desired I/O.

b. The 47 mode code appears enclosed in <> in the second row of the message area.

c. Press the Utility key.

d. Enter the desired multi number using the copy quantity button. (Refer to the multi mode list.)

e. The multi number will be displayed enclosed in <>, following the 47 mode code and "- ".

```
I/O check mode
< 10-01 >  IN: --  OUT: --
```

f. Press the Utility key.

g. Check the status of the signal displayed as H or L after "IN:" in the second row of the message display area.

(2) To check the output

a. Press the START button.

b. Press the STOP button after checking the output.

(3) Ending multi mode

a. Turn off the main switch to exit the 47 mode (multi mode).

Step	Operation
1	Enter the 47 mode.
2	**[I/O check Screen]** Use the copy quantity button and enter the code.
3	Press the Utility key.
4	Enter the multi number using the copy quantity button.
5	Press the Utility key.
6	Check the input signal check result displayed after "IN:" in the second row of the message area.
7	To perform the output check, press the Start button to check the output load.
8	Press the STOP button to end the output check.
9	Turn off the main switch to exit the 47 mode.

Note1: To check another multi number in the same code, press the Utility key after completing step 8. And enter another multi number. A newly entered number is written over the previously entered number.

Note2: To return to the normal 47 mode, press the STOP button while holding down the Utility key after completing step 8.

[2] Adjustment Data Display

Displaying a list of machine adjustment values (factory-set values and current values).
No adjustment (data value change) can be made in this mode.

Step	Operation
1	Enter the 47 mode.
2	**[I/O check Screen]** Enter 94 with numeric keys. Make sure 94 is displayed in the message display field.
3	Press the Start button.
4	**[Adjustment data display Screen]** Press the ▲ or ▼ button to display a desired adjustment item.
5	Press the End key to return to the I/O check mode screen.

[3] Hard Disk Check

This adjustment is to be performed when checking the total capacity and remaining capacity of the optional hard disk and when error codes related to the hard disk occur.

Step	Operation
1	Enter the 47 mode.
2	Enter 99 with numeric keys.
3	(1) Checking the total capacity of the hard disk: Press the Utility key and enter 1 with a numeric key. Make sure 99-01 is displayed in the message display field.
	(2) Checking the remaining capacity of the hard disk: Press the Utility key and enter 2 with a numeric key. Make sure 99-02 is displayed in the message display field.
	(3) Checking and recovering bad sectors on the hard disk: Press the Utility key and enter 3 with a numeric key. Make sure 99-03 is displayed in the message display field.
4	Press the START button.
5	(1) When the total capacity of the hard disk is checked: The total capacity of the hard disk is displayed after "OUT:" in the message display field.
	(2) When the remaining capacity of the hard disk is checked: The remaining capacity of the hard disk is displayed after "OUT:" in the message display field.
	(3) When bad sectors on the hard disk are checked and recovered: "NOW" is displayed after "OUT:" in the message display field and bad sector check and recovery start. Several minutes later, "OK" is displayed in the case of normal termination, "NG" is displayed in the case of abnormal termination. When "NG" is displayed, retry bad sector check and recovery. If "NG" is displayed again, replace the hard disk.

Note1: Once the bad sector check and recovery procedure start, it can not be canceled. (The STOP button and mode change key are ineffective.)

Note2: The hard disk is weak against vibration and shock. When moving the copy machine, be sure to remove the hard disk in advance.

[4] Input checklist

Classi-fication	Code	Symbol	Multi mode	Name	Display and Signal Source H	Display and Signal Source L
Analog signal	001	TLD		Remaining toner detection signal	In	Empty
	002	VR301		ADF original size VR signal	0 to 255	
	003	TH1		Fixer upper roller temperature detection signal		
	004			Fixer upper roller temperature	°C	
	005			Humidity sensor signal	0 to 255	
	006			Dmax MONI signal		
	007			Dmax signal		
	008			γ signal		
	009			Machine inside temperature signal		
Paper feed	011	PS3	1	Tray 1 no paper detection signal	ON	OFF
		PS9	2	Tray 2 no paper detection signal		
		PS15	3	Tray 3 no paper detection signal		
		PS21	4	Tray 4 no paper detection signal		
		PS33	5	By-pass feed tray no paper detection signal		
		PS108	6	LCT no paper detection signal		
	012	PS4	1	Tray 1 remaining paper detection signal		
		PS10	2	Tray 2 remaining paper detection signal		
		PS16	3	Tray 3 remaining paper detection signal		
		PS22	4	Tray 4 remaining paper detection signal		
		PS102	5	LCT remaining paper detection signal 1		
		PS103	6	LCT remaining paper detection signal 2		
		PS104	7	LCT remaining paper detection signal 3		
		PS105	8	LCT remaining paper detection signal 4		
	013	PS5	1	Tray 1 paper size detection signal 1		
		PS6	2	Tray 1 paper size detection signal 2		
		PS11	3	Tray 2 paper size detection signal 1		
		PS12	4	Tray 2 paper size detection signal 2		
		PS17	5	Tray 3 paper size detection signal 1		
		PS18	6	Tray 3 paper size detection signal 2		
		-	7	-		
		-	8	-		
		PS31	9	By-pass feed tray paper size detection signal 1		
		PS32	10	By-pass feed tray paper size detection signal 2		
	014	VR1	1	Tray 1 paper size detection VR signal	0 to 255	
		VR2	2	Tray 2 paper size detection VR signal		
		VR3	3	Tray 3 paper size detection VR signal		
		-	4	-		
		VR5	5	By-pass feed tray paper size detection VR signal		
	015		1	Tray 1 paper size signal	0:11x17,1:A3,2:B4,3:8.5x14,4:A4R,5:8.5x11R,6:B5R,7:8.5x11,8:5.5x8.5R,9:A4,10:A5R11:B5,12:A5,13:B6R,14:5.5x8.5,15:B6,16:Spesial,17:F4(8.125x13.25),18:F4(8x13),19:F4(8.25x13),20:F4(8.5x13)	
			2	Tray 2 paper size signal		
			3	Tray 3 paper size signal		
			4	-		
			5	By-pass feed tray paper size signal		

Classi-fication	Code	Symbol	Multi mode	Name	Display and Signal Source	
					H	L
Paper feed	016	PS2	1	Tray 1 upper limit detection signal	ON	OFF
		PS8	2	Tray 2 upper limit detection signal		
		PS14	3	Tray 3 upper limit detection signal		
		-	4	-		
		PS34	5	By-pass feed tray upper limit detection signal		
		PS35	6	By-pass feed tray lower limit detection signal		
		PS109	7	LCT upper limit detection signal		
		PS101	8	LCT lower limit detection signal		
	017		1	Tray 1 tray set detection signal		
			2	Tray 2 tray set detection signal		
			3	Tray 3 tray set detection signal		
			4	-		
Paper feed/Conveyance	020	PS1	1	Tray1 pre-registration detection signal		
		PS7	2	Tray2 pre-registration detection signal		
		PS13	3	Tray3 pre-registration detection signal		
		-	4	-		
		PS107	5	LCT pre-registration detection signal		
	021	PS25	1	Tray 1 vertical conveyance detection signal		
		PS26	2	Tray 2 vertical conveyance detection signal		
		PS27	3	Tray 3 vertical conveyance detection signal		
		-	4	-		
	022	PS106	1	LCT paper feed detection signal		
	023	PS43	1	Transfer paper leading edge detection signal		
		PS36	2	Loop detection signal		
		PS44	3	Second paper feed detection signal		
	024	PS30	1	Fixing exit detection signal		
		PS37	2	Main body paper exit detection signal		
		PS42	3	Paper reverse detection signal		
		PS46	4	Reversed paper exit detection signal		
	025	PS29	1	Vertical conveyance door open/close detection signal	Open	Close
		PS39	2	Front door open/close detection signal (left front door)		
		PS38	3	Front door open/close detection signal (right front door)		
		MS1 MS2	4	Front door open/close detection SW signal		
		PS100	5	LCT top cover open/close detection signal		
		PS110	6	LCT jam access cover open/close detection signal		
		PS40	7	Toner supply door open/close detection signal		
Scanner unit	030	PS61	1	Scanner home position detection signal	OFF	ON
	031	PS63	1	APS sensor 1 detection signal		
		PS64	2	APS sensor 2 detection signal		
		PS65	3	APS sensor 3 detection signal		
		-	4	-		
		-	5	-		
		-	6	-		
		-	7	-		
		PS51	8	APS timing detection signal	Close	Open
Proper functions	051	SW100		LCT tray down SW	ON	OFF
	052	C(K)		Key counter	Provided	Not provided

Classi-fication	Code	Symbol	Multi mode	Name	Display and Signal Source	
					H	L
ADF	060	PS310	1	Original size detection signal 1	ON	OFF
		PS309	2	Original size detection signal 2		
		PS304	3	Original registration detection signal 1		
		PS305	4	Original registration detection signal 2		
		PS306	5	Original conveyance detection signal		
		PS303	6	Original ejection detection signal		
		PS301	7	Last original detection signal		
		PS302	8	Original setting detection signal		
		MS301	9	Cover open/close MS detection signal	OFF	ON
		PS311	10	ADF open/close detection signal	ON	OFF
		PS307	11	Original skew detection signal/F		
		PS308	12	Original skew detection signal/R		
FNS	076	PS701	0	Sub tray paper exit detection signal	OFF	ON
		PS702	1	Tray upper limit detection signal	ON	OFF
		PS703	2	Tray lower limit detection signal		
		PS704	3	FNS entrance detection signal	OFF	ON
		PS705	4	Stacker entrance detection signal	ON	OFF
		PS706	5	Main tray paper exit detection signal		
		PS707	6	Stapler paper exit upper limit detection signal	OFF	ON
		PS708	7	Alignment HP/U detection signal	ON	OFF
		PS709	8	Paper exit belt HP detection signal		
		PS713	9	Stapler rotation HP detection signal		
		PS711	10	Stapler movement HP detection signal		
		PS712	11	Paper exit HP detection signal		
		PS714	12	Clincher rotation HP detection signal		
		PS715	13	Counter reset HP detection signal		
		PS718	14	Shift HP detection signal		
		PS720	15	Stacker no paper detection signal		
		SW702	16	Staple/R SW detection signal	OFF	ON
		PS730	17	Stapler HP/R detection signal		
		SW701	18	Cartridge/R detection signal		
		M710	19	Clincher /R detection signal	Other than start	Start
		-	20	-	-	-
		PS732	21	Clincher HP/R detection signal	OFF	ON
		PS719	22	Sub tray full detection signal	ON	OFF
		MS701	23	FNS interlock MS detection signal		
		SW704	24	Staple/F SW detection signal	OFF	ON
		PS731	25	Stapler HP/F detection signal		
		SW703	26	Cartridge/F detection signal		
		M715	27	Clincher /F detection signal	Other than start	Start
		-	28	-	-	-
		M733	29	Clincher HP/F detection signal	OFF	ON
		M707	30	Paper exit motor lock detection signal	Other than controlled speed	Controlled speed
		FNS	31	FNS connection signal	Connected	Not connected
		PS722	32	Folding knife HP detection signal	ON	OFF
		PS723	33	Stopper HP detection signal		

Classi-fication	Code	Symbol	Multi mode	Name	Display and Signal Source	
					H	L
FNS	076	PS724	34	Alignment/L HP detection signal	OFF	ON
		PS725	35	Folding exit detection signal		
		PS726	36	Folding passage detection signal		
		PS729	37	Folding full detection signal	Other than full	Full
		-	38	-	-	-
		M720	39	Folding conveyance motor lock detection signal	Other than controlled speed	Controlled speed
		-	40	-	-	-
		-	41	-		
		-	42	-		
		-	43	-		
PI		M203	44	PI conveyance motor	Other than controlled speed	Controlled speed
		-	45	-	-	-
		-	46	-	-	-
		-	47	-		
		-	48	-		
		-	49	-		
		-	50	-		
		-	51	-		
		PS201	52	PI passage /U detection signal	ON	OFF
		PS206	53	PI passage /L detection signal		
		-	54	-	-	-
		-	55	-		
		-	56	-		
		-	57	-		
		-	58	-		
		-	59	-		
		-	60	-		
FNS		PS716	61	Gate HP detection signal	ON	OFF
PI		-	62	-	-	-
		-	63	-		
		PS202	64	No sheet /U detection signal	OFF	ON
		PS203	65	Sheet setting /U detection signal		
		PS205	66	Tray lower limit/U detection signal	ON	OFF
		PS204	67	Tray upper limit/U detection signal		
			68	PI start /stop detection signal	OFF	ON
			69	PI punch SW detection signal		
			70	PI mode SW detection signal		
		MS201	71	PI interlock MS detection signal		
		PS207	72	No sheet /L detection signal		
		PS208	73	Sheet setting /L detection signal		
		PS210	74	Tray lower limit /L detection signal	ON	OFF
		PS209	75	Tray upper limit /L detection signal		

Classi-fication	Code	Symbol	Multi mode	Name	Display and Signal Source	
					H	L
PI	076	-	76	-	-	-
		VR212	77	Sheet size/ L detection VR signal	OFF	ON
		-	78	-	-	-
		PI	79	PI connection signal	Not connect	Connect
		-	80	-	-	-
		-	81	-		
		-	82	-		
PK		PS801	83	Punch HP detection signal	ON	OFF
		-	84	-	-	-
		-	85	-		
		PS802	86	Punch scraps full detection signal	OFF	ON
		PS804	87	Punch scraps box detection signal	Set	Other than set
ADU	080	PS45	1	ADU reverse detection signal	ON	OFF
		PS48	2	ADU conveyance detection signal /2		
		PS49	3	ADU deceleration detection signal		
		PS50	4	ADU pre-registration detection signal		
		PS47	5	ADU handle detection signal		
		PS41	6	ADU conveyance detection signal		

[5] Output checklist

Classi-fication	Code	Symbol	Multi mode	Name	Cannot be set or changed in field
Analog signal	000	L1		*1 Exposure lamp	
	001	M13		Toner bottle motor	
	002	HV		Charger	×
	003			Transfer	×
	004			Separation (AC+DC)	×
	005			D max LED	×
	006			γ LED	×
	007			Jam detection LED	×
	008	HV		Transfer access guide plate	×
	009			Bias	
	010			Toner guide roller	×
Paper feed	020	SD100		LCT paper feed pickup SD	
	021			Feed MC	
		MC3	1	Tray 1	
		MC5	2	Tray 2	
		MC7	3	Tray 3	
		-	4	-	
		MC101	5	LCT	
		MC11	6	Vertical conveyance CL1	
		MC12	7	Vertical conveyance CL2	
	022			Pre-registration CL	
		MC4	1	Tray 1	
		MC6	2	Tray 2	
		MC8	3	Tray 3	
		-	4	-	
		MC102	5	LCT	
	023			Tray up motor /LCT UP/DOWN motor	
		M16	1	Tray 1	
		M17	2	Tray 2	
		M18	3	Tray 3	
		-	4	-	
		M100	5	LCT up	
			6	LCT down	
		M20	7	By-pass up	
			8	By-pass down	
	025	MC1		Registration MC	

Classi-fication	Code	Symbol	Multi mode	Name	Cannot be set or changed in field
Paper feed	026	M6		Loop roller motor	
			1	Loop motor H(470mm/s), forward	
			2	Loop motor L(320mm/s), forward	
			3	Loop motor L(280mm/s), forward	
			4	Loop motor L(185mm/s), forward	
			5	Loop motor H(470mm/s), backward	
			6	Loop motor L(320mm/s), backward	
			7	Loop motor L(280mm/s), backward	
			8	Loop motor L(185mm/s), backward	
	027	M7		Paper exit motor	
			1	Paper exit motor(320mm/s)	
			2	Paper exit motor(280mm/s)	
			3	Paper exit motor(185mm/s)	
			4	Paper exit motor(660mm/s)	
	028	M1	1	Paper feed motor	
		M101	2	LCT Paper feed motor (470mm/s)	
	029	SD1		Separation claw SD	
Scanner unit	-	-		-	
	031	M11		*2 Scanner drive motor	
	032	M15		*3 Polygon motor	
			0	320mm/s	
			1	280mm/s	
			2	185mm/s	
	034			*4 Shading correction	
	037			-	
	038			-	

***Caution:** When the START key is pressed, "Watch input?" [YES] and [NO] appears. When [YES] or [NO] is selected for each code, the following operation is performed:

*1 [YES] Turns ON the exposure lamp and scanner cooling fan.

[NO] Turns ON the exposure lamp for 10 minutes.

*2 [YES] Performs HP search and scanner to-and-fro operations.

[NO] Moves the scanner 10mm to the right.

*3 [YES] Turns ON the polygon motor and write unit cooling fan.

[NO] Turns ON the polygon motor for 30 seconds.

*4 [YES] Performs HP search and shading operations.

[NO] Moves the scanner 10mm to the right.‘

Classi-fication	Code	Symbol	Multi mode	Name	Cannot be set or changed in field
Main body	040	M4		Fixing motor	
			0	Fixing motor (320mm/s)	
			1	Fixing motor (280mm/s)	
			2	Fixing motor (185mm/s)	
	041	M2/M3		Drum motor	
			0	Drum motor / Developing motor (320mm/s)	
			1	Drum motor / Developing motor (280mm/s)	
			2	Drum motor / Developing motor (185mm/s)	
	042		M	Fan motor	
		FM9	1	Scanner cooling fan	
		FM2	2	Write unit cooling fan (High)	
			3	Write unit cooling fan (Low)	
		FM3	4	Conveyance suction fan	
		FM4	5	Developing suction fan	
		FM1	6	Main body cooling fan (High)	
			7	Main body cooling fan (Low)	
		FM5	8	Cleaner cooling fan (High)	
			9	Cleaner cooling fan (Low)	
		FM8	10	Main body cooling fan/2	
		FM13	11	Power supply cooling fan	
		FM10	12	ADU reverse motor cooling fan	
	043			Counter	
		-	1	Total counter	
			2	Key counter	
	045	-	1	-	
			2	-	
			3	-	
		SD2	4	Fixing web SD	
	046	M14		Charger cleaning motor	
			0	To-and-fro operation	
			1	Move to rear	
			2	Move to front	
	047	M10		Transfer/separation cleaning motor	
			0	To-and-fro operation	
			1	Move to rear	
			2	Move to front	
	048	-		Illuminate all LEDs on the operation board	
	049	-		Operation unit check	
	050	M2/M3		Developing motor / Drum motor	
	051	PCL		PCL	
	052	TSL		TSL	
	054	MC14		Toner recycle MC	
	055	-		Message test	
	056	M12		Toner supply motor	
	057			-	
	058			-	
	059			-	
RADF	060	M301	1	Original feed motor (forward)	
			2	Original feed motor (backward)	
		M302	3	Original conveyance motor (forward)	
			4	Original conveyance motor (backward)	
		MC301	5	Paper feed MC	
		SD303	6	Pressure roller release SD	
		SD301	7	Reverse gate SD	
		SD302	8	Paper exit gate SD	
		FM301	9	Original conveyance motor cooling fan	
FNS	075	M701	1	FNS conveyance motor	
		M702	2	Shift motor (HP search)	
			3	Shift motor (moves to the shifting position)	
			4	Shift motor (one turn)	
		M703	5	Tray up/down motor (HP search)	
			6	Tray up/down motor (moves to the lower limit)	
			7	Tray up/down motor (up/down operation in the case of small quantity of staple mode)	

Classification	Code	Symbol	Multi mode	Name	Cannot be set or changed in field
FNS	075	M705	8	Alignment motor /U (HP search)	
		M707	9	Paper exit roller motor (staple mode HP search)	
		M707	10	Paper exit roller motor (reverse)	
		M708	11	Paper exit opening motor (HP search)	
			12	Paper exit opening motor (shifts the opening)	
		M709	13	Stapler motor /R (initial)	
			14	Stapler motor /R (stapling operation)	
		M714	15	Stapler motor /F (initial)	
			16	Stapler motor /F (stapling operation)	
		M711	17	Stapler movement motor HP search (moves 2 stapling positions)	
			18	Stapler movement motor HP search (moves 1 stapling position for A4)	
		M713	19	Stacker entrance motor	
		M718	20	Stopper motor (HP search)	
		M716	21	Alignment motor /L (HP search)	
		-	22	-	
		M719	23	Folding knife motor (HP search)	
		M720	24	Folding conveyance motor	
			25	-	
			26	-	
			27	-	
			28	-	
			29	-	
		SD704	31	Paper exit SD	
		SD705	32	By-pass gate SD	
		M705	33	Alignment /U motor (open)	
			34	Alignment /U motor (close)	
			35	Alignment /U motor (rocking)	
		M716	36	Alignment motor /L (open)	
			37	Alignment motor /L Close(A4 position)only allowed from HP	
			38	Alignment motor /L rocking (only allowed from Open position)	
		M718	39	Stopper motor	
		-	40	-	
		-	50	-	
		-	51	-	
		-	52	-	
		-	53	-	
		-	54	-	
		-	55	-	
		-	56	-	
		-	57	-	
		-	58	-	
		-	59	-	
		-	60	-	
		-	61	-	
		-	62	-	
		-	63	-	
PI		MC202	64	Conveyance MC /L	
		M202	65	Tray up/down motor /L (move to the lower limit)	
			66	Tray up/down motor /L (HP research)	
		SD202	67	Sheet feed SD /L	
PK			76	-	
			77	-	
		M801	78	Punch motor	
			79	-	
			80	-	
			81	-	
			82	-	

Classi-fication	Code	Symbol	Multi mode	Name	Cannot be set or changed in field
PI	075	MC201	83	Conveyance MC /U	
		M201	84	Tray up/down motor /U (rise)	
			85	Tray up/down motor /U (HP search)	
		SD201	86	Sheet feed SD /U	
		M203	87	PI conveyance motor	
FNS		M712	88	Gate drive motor (HP search : sub tray direction)	
			89	Gate drive motor (switches the stacker direction)	
			90	Gate drive motor (switches the main tray direction)	
		M721	91	Sub-tray paper exit motor	
		M704	92	Clincher rotation motor (HP search)	
			93	Clincher rotation motor (skew shift)	
		M706	94	Stapler rotation motor (HP search)	
			95	Stapler rotation motor (skew shift)	
		SD706	96	Three folding SD	
			97	-	
			98	-	
			99	FNS paperless running mode	
RADU	080		1	Reverse gate SD	
			2	ADU lock SD	
	081	MC13		ADU conveyance MC	
	082	MC2		ADU conveyance MC	
	083	M5		Second paper feed motor	
	084	M9		ADU reverse motor	
			1	Forward(320mm/s)	
			2	Forward(280mm/s)	
			3	Forward(185mm/s)	
			4	Forward(600mm/s)	
			5	Forward(700mm/s)	
			6	Backward(660mm/s)	
			7	Backward(577mm/s)	
			8	Backward(382mm/s)	
	085	-	-	-	
	086	M8		Reversed paper exit motor	
			1	Forward(320mm/s)	
			2	Forward(280mm/s)	
			3	Forward(185mm/s)	
			4	Forward(600mm/s)	
			5	Forward(700mm/s)	
			6	Backward(660mm/s)	
Adjustment process	092			Process initial set (Prohibited in the field)	×
	093			-	
	094			Adjustment mode display mode	
	096			Finished process and shipment setting (Prohibited in the field)	×
	097			DIMM capacity check for Electronics RDH	
	098			DIMM check for Electronics RDH	
	099	HDD	1	HDD total capacity check	
			2	HDD remaining capacity check	
			3	HDD bad sectors check and recovery	

OTHER ADJUSTMENT

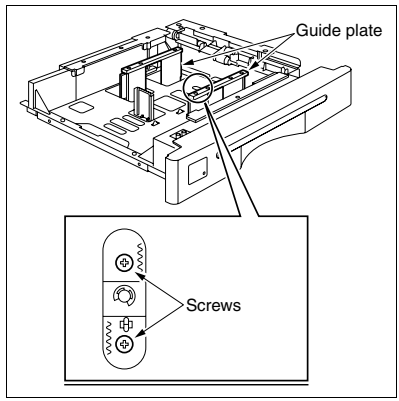
[1] Centring Adjustment

Caution: Centring adjustment need not be performed normally because paper inclination is detected in the second paper feed section and original image is corrected in the image processing unit to fit an inclined paper. Centring adjustment is required only when the detected paper inclination is not within the automatic image correction range.

1. Tool

- Screwdriver (Phillips)

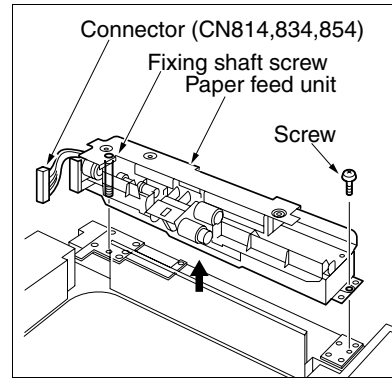
2. Tray 1/2/3 centring adjustment



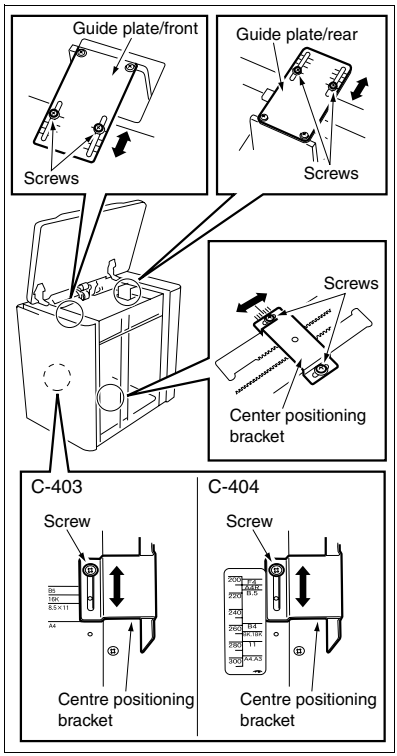
a. Adjustment method

Step	Operation
1	Draw out the tray.
2	Loosen the two screws at the centre of the tray.
3	Slide the guide plate to adjust the centre position.
4	Tighten the two screws securely.
5	Insert the tray and make a copy to check the result.
6	Perform steps 1-5 repeatedly until mis-centring is included in the automatic adjustment range (±3mm).

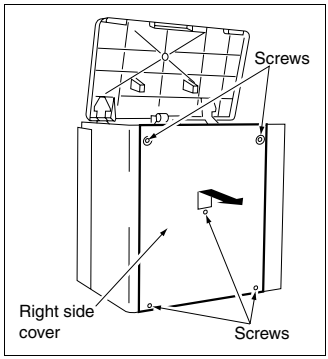
Caution: Disable the mis-centering correction function by setting the dip switch 12-3 and confirm it (Enter 1 to set to ON). Confirm it using the internal pattern No.16



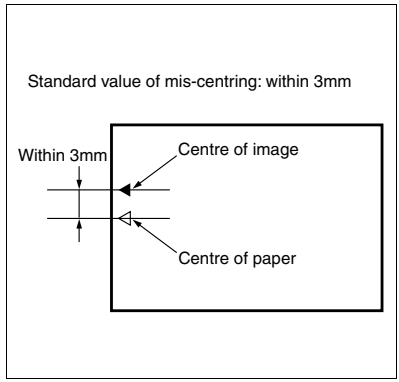
3. LCT tray centring adjustment



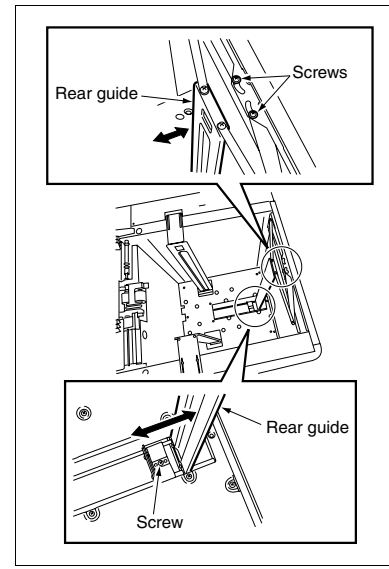
a. Adjustment method

Step	Operation
1	Raise the up/down plate.
2	Open the top cover.
3	Remove five screws to detach the side cover (right). 
4	Loosen two screws on the upper part of LCT to slide the guide plates (front/rear) the same amount in the same direction.
5	Secure the guide plates by tightening two screws firmly.
6	Loosen three screws to slide the centre positioning brackets the same amount in the same direction as you did for the guide plates (front/rear) in the step 4.
7	Secure the centre positioning brackets by tightening three screws firmly.
8	Put the LCT back into the original position and make a copy to check the result.
9	Perform steps 1-8 repeatedly until mis-centering is included in the automatic adjustment range (±3mm).

Caution: Disable the mis-centering correction function by setting the dip switch 12-3 (Enter 1 to set ON) and confirm it. Confirm it using the test pattern No.16.



4. Setting the LCT Rear Guide (C-404 only)



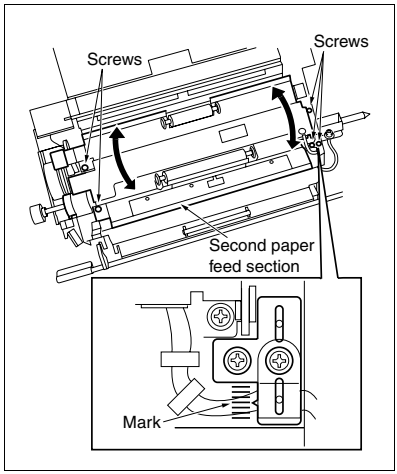
a. Adjustment method

Step	Operation
1	Open the top cover.
2	Press SW100 (LT tray down switch) to lower the up/down plate to the bottom.
3	Loosen two screws at the top of the rear guide and one screw at the bottom.
4	Set paper on the up/down plate, align the trailing edge of paper with the lower end of the rear guide, then fasten the lower screw.
5	Fasten the two upper screws temporarily and move the up/down plate to the highest position.
6	Set paper on the up/down plate, align the trailing edge of paper with the upper end of the rear guide, then tighten the two upper screws finally.

Reference: LCT tray size setting can be performed in the key operation mode by setting DIPSW21-1 to 1 in the 25 mode.

[2] Skew adjustment (Main body)

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method



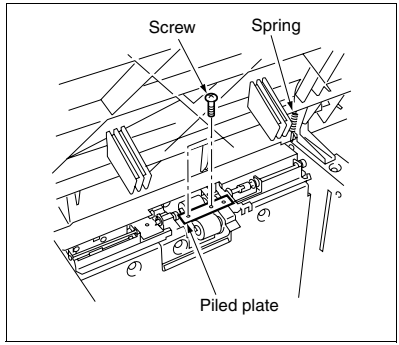
Step	Operation
1	Make a copy to measure for skew.
2	Loosen the five screws securing the second paper feed unit.
3	Rock the second paper feed unit to adjust using the mark as a guide.
4	Retighten the five screws.
5	Make adjustments by repeating steps 2 to 4 until the skew becomes within the specified range.

Specified range: Paper skew ±5% or less (Paper skew in the paper feed direction)

[3] Adjusting the LCT Paper Feed Roller Pressure (C-404 only)

Caution: This adjustment is required when no paper feed occurs.

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method



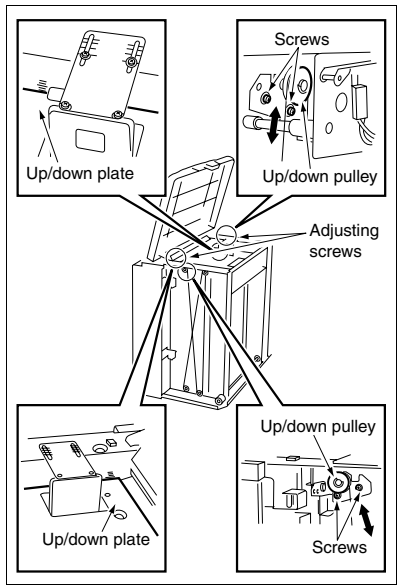
Step	Operation
1	Open the top cover.
2	Remove the spring.
3	Install a weight plate above the paper feed rollers using the two screws.
4	Make a copy to check whether paper is fed properly.
5	If paper is not fed properly, add another weight plate and repeat steps 5 and 6.
6	Install the spring.

Caution: Four weight plates come standard with the LCT, and can be installed up to six.

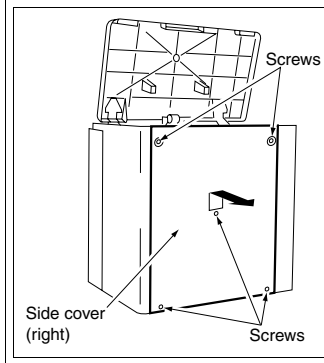
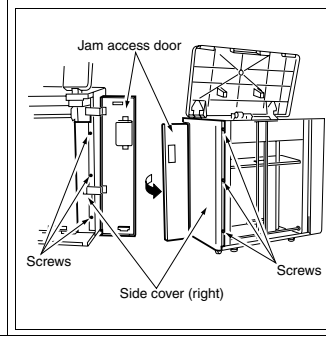
[4] Paper up/down plate horizontal adjustment (LCT only)

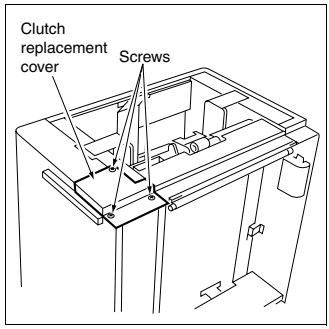
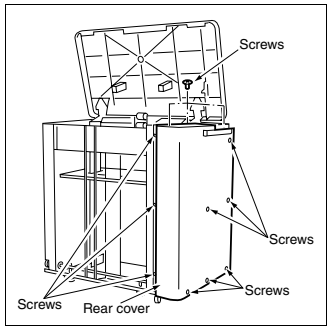
Caution: Up/down plate horizontal adjustment must be carried out when a paper feed jam occurs frequently or after replacement of the up/down wires of a tray.

1. Tool
   - Screwdriver (Phillips)
2. LCT up/down plate horizontal adjustment of C-403

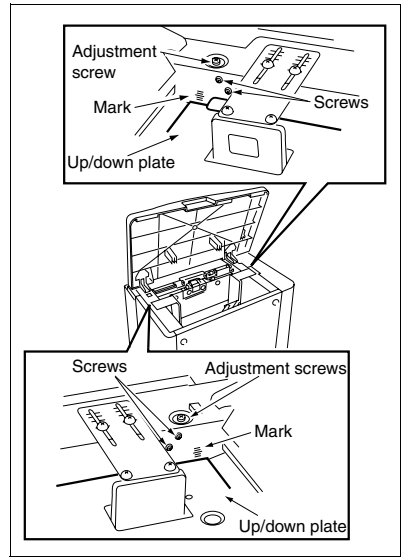


a. Adjustment method

Step	Operation
1	Raise the up/down plate.
2	Open the top cover.
3	Remove five screws to detach the side cover (right). 
4	Open the jam access door, then remove six screws to detach the front cover. 

Step	Operation
5	Remove three screws to detach the clutch replacement cover. 
6	Remove twelve screws to detach the rear cover. 
7	Loosen two screws and adjust the position for each up/down pulley using an adjustment screw so that the front and rear of the up/down plate are at the same height.
8	Fasten two screws securely for each up/down pulley to fix its position.
9	Install the rear cover, clutch replacement cover, front cover, and side cover (right).

3. LCT up/down plate horizontal adjustment of C-404



a. Adjustment method

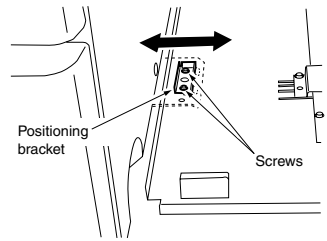
Step	Operation
1	Lift the up/down plate up.
2	Open the top cover.
3	Loosen the two screws and adjust the position using an adjustment screw and the mark so that the front and rear of the up/down plate are at same height.
4	Fasten two screws securely

[5] Skew adjustment (LCT only)

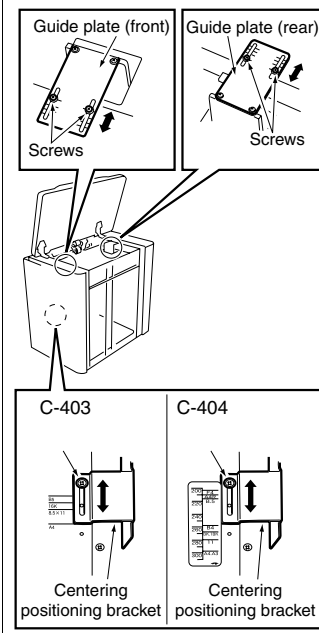
Caution: Skew adjustment is required when the paper supplied from the current tray is different from the paper supplied from other trays in the way it is skewed. However, this adjustment has little effect because skew of paper supplied from all trays is corrected in the second paper feed unit.

1. Tool
   - Screwdriver (Phillips)
2. LCT skew adjustment

a. Adjustment method (when all printed sheets are skewed)

Step	Operation
1	Print a test pattern (No.16) in the continuous copy mode to check for skew.
2	Open the jam access door of the LCT and adjust the installation position of the positioning bracket on the bottom plate. 

b. Adjustment method (when some printed sheets are skewed irregularly)

Step	Operation
1	Print a test pattern (No.16) in the continuous copy mode to check for skew.
2	Remove the side cover (right).
3	Loosen the five screws securing the guide plates (front and rear) and the centering positioning bracket temporarily. Press the guide plates (front and rear) against paper, then tighten the five screws. 

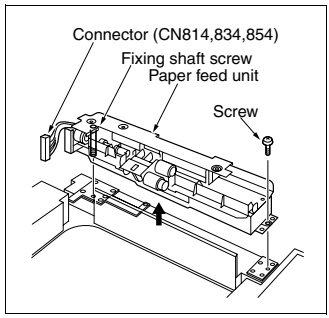
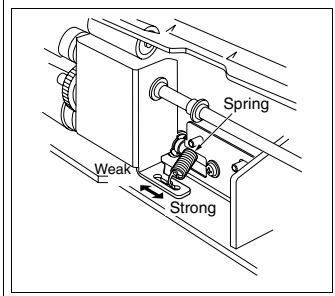
Reference: The indicated size of each guide plate is about 2mm wider than the size of regular paper. The 2mm gap may cause paper skew depending on the paper type. To reduce this skew, press the guide plates (front and rear) against paper tightly.

[6] Tray spring pressure adjustment

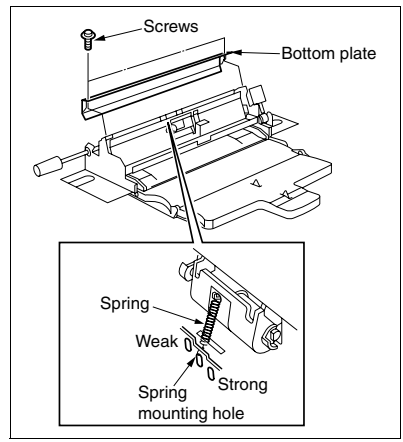
Caution: Tray spring pressure adjustment must be performed when no feed or double feed of paper occurs. Tray spring pressure may be affected by the type of paper used or the operating environment (under low temperature conditions, no feed of paper tends to occur. Under high temperature conditions, double feed of paper tends to occur). Excessive adjustment of tray spring pressure may exacerbate the problem. Take care.

1. Tool
   - Screwdriver (Phillips)
   - Flat-nose pliers
2. Tray 1/2/3 spring pressure adjustment

a. Adjustment method

Step	Operation
1	Draw out the tray.
2	Remove one screw, loosen one hold-down shaft screw, and detach the paper feed unit. 
3	Change the spring hooking position at the bottom of paper feed unit. **Weak:** Double feed is prevented. **Strong:** No feed is prevented. **Reference:** Reference: The spring load changes about 10% each time the spring is hooked in the next slit. 
4	Set the tray.

3. By-pass paper feed spring pressure adjustment

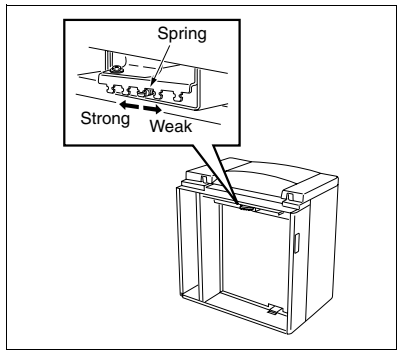


a. Adjustment method

Step	Operation
1	Remove the by-pass tray.
2	Remove two screws and detach the bottom plate assembly.

3	Change the spring hooking position. **Weak:** Double feed is prevented. **Strong:** No feed is prevented. **Reference:** The spring load changes about 15% each time the spring is hooked in the next slit.
4	Install the by-pass tray.

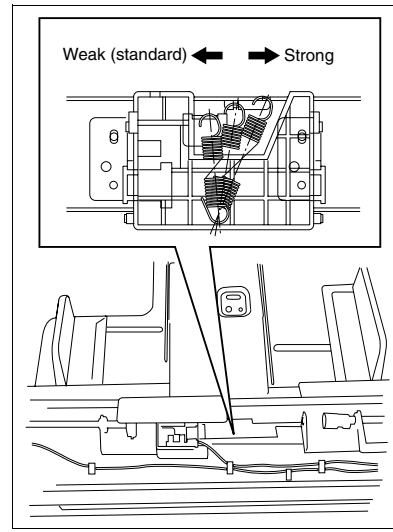
4. LCT spring pressure adjustment



a. Adjustment method

Step	Operation
1	Remove the LCT from the main body.
2	Change the spring hooking position. **Weak:** Double feed is prevented. **Strong:** No feed is prevented. **Reference:** The spring load changes about 10% each time the spring is hooked in the next slit.
3	Re-install the LCT.

5. PI spring pressure adjustment



a. Adjustment method

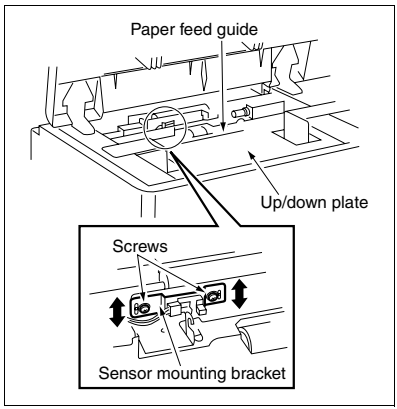
Step	Operation
1	Remove the following parts. • Top cover • Paper feed roller unit • Double feed prevention roller
2	When adjusting the spring pressure for the lower tray, open the upper unit and detach the following parts. • Paper feed roller unit • Double feed prevention roller
3	Using flat-nose pliers, change the spring hooking position through the hole at double feed prevention roller. **Weak:** Double feed is prevented. **Strong:** No feed is prevented. **Reference:** Normally the spring hooking position should be changed when no feed occurs. However, if the setting for this position is too strong, double feed may occur for normal paper.
4	Install the parts, following the removal steps in reverse.

[7] Paper feed height (upper limit) adjustment (LCT only)

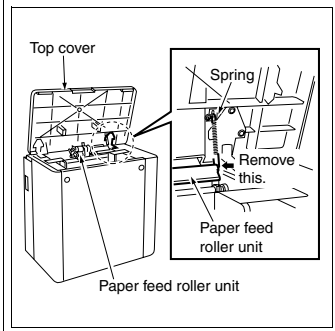
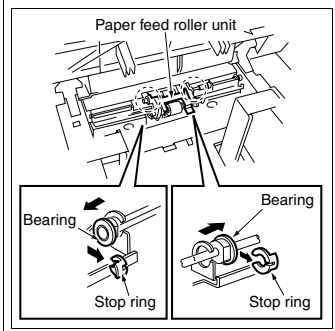
Caution1: Paper feed height (upper limit) adjustment must be performed when no paper feed occurs, when the leading edge of the fed paper is folded or when a convexly curled paper is fed. To perform this adjustment, move the upper limit sensor mounting bracket vertically.

Caution2: This adjustment may affect the release amount of the pick-up so that [8] pick-up roller release amount adjustment must be performed after this adjustment.

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. LCT Adjustment of paper feed height (upper limit)



a. Adjustment method

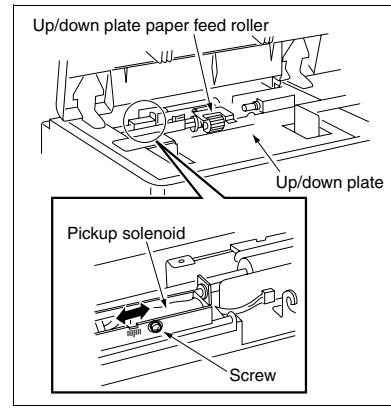
Step	Operation
1	Move the up/down plate up.
2	Open the top cover.
3	Measure the distance between the top surfaces of the paper feed guide and paper up/down plate and check whether it is within specifications. Standard value: 2 to 5 mm If the leading edge of the paper is folded irrespective of whether the above distance is within specifications, perform steps 4 and later.
4	Remove the spring from the paper pick-up roller unit. 
5	Remove two stop rings to slide the two bearings outward, then remove the paper feed roller unit. 
6	Remove two screws securing the sensor mounting bracket and install them in the outside mounting holes (oblong holes) temporarily.

7	<When the heights are not within specifications> Adjust the position of the sensor mounting bracket vertically so that the distance between the top surfaces of the paper feed guide and paper up/down plate is within the specifications. When raising the height of the paper up/down plate: Lower the sensor mounting bracket. When lowering the height of the paper up/down plate: Raise the sensor mounting bracket. <When any fault has occurred> When the paper has folded leading edge: When the paper has dented curl: Raise the sensor mounting bracket. When the paper has convex curl: Lower the sensor mounting bracket.
8	Install the paper feed roller unit and spring.
9	Close the top cover.

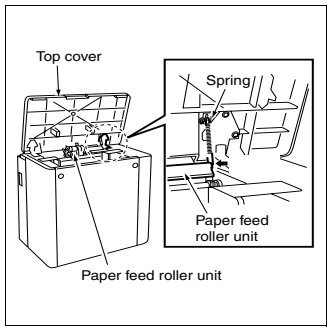
[8] Pick-up release amount adjustment (LCT only)

Caution: Pick-up release amount adjustment must be performed when a no-feed jam occurs frequently. To perform this adjustment, adjust the mounting position of the pick-up solenoid.

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. LCT pick-up release amount adjustment

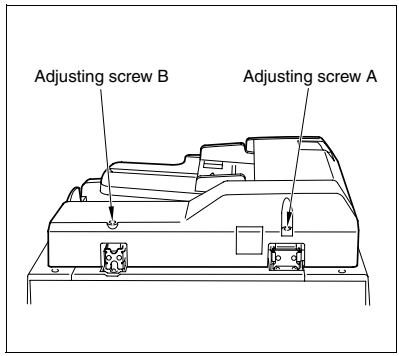


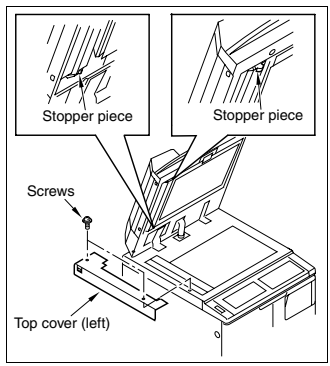
a. Adjustment method

Step	Operation
1	Move the paper up/down plate up.
2	Open the top cover.
3	Remove the paper feed pick-up cover/B.
4	Remove the spring from the paper feed roller unit. 
5	Pull the moving parts of the pick-up solenoid and check whether the distance between the bottom surface of the paper feed roller and the top surface of the up/down plate is within specification. Specification: 0.5 to 2.5mm If the distance is out of spec, perform steps 5 and later.
6	Loosen one screw and adjust the mounting position for the pick-up solenoid. **Caution:** Take a note to remember the initial mounting position.
7	Secure the pick-up solenoid by tightening the screw.
8	Install the spring.
9	Install the paper feed pick-up cover/B.
10	Close the top cover.

[9] RADF mounting position adjustment

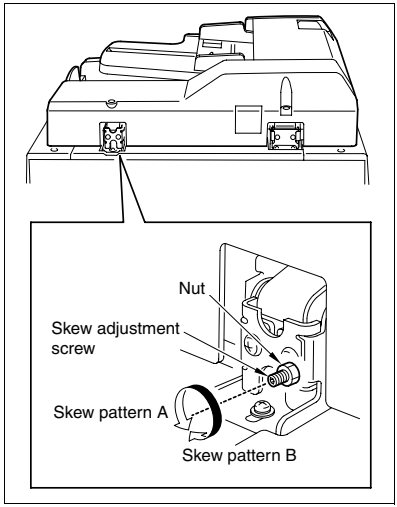
1. Tool
   - Screwdriver (Phillips)
   - Open-end wrench or flat-nose pliers.
2. Adjustment method

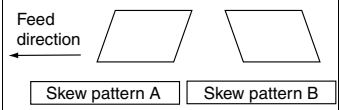
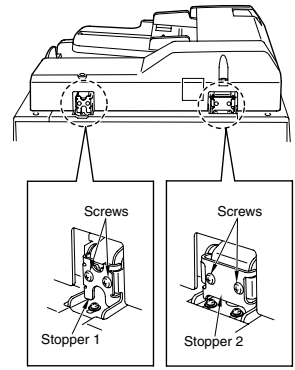
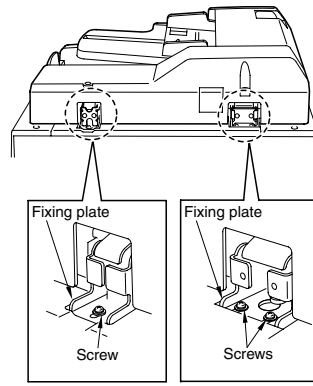


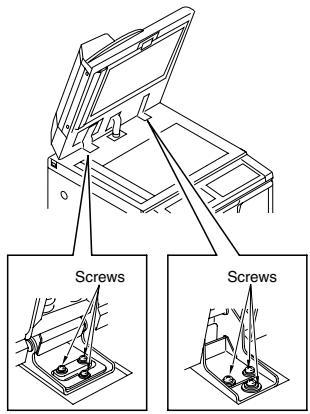
Step	Operation
1	Open the RADF, remove two screws and detach the top cover (left).
2	Close the RADF.
3	Check if both stopper pieces on the RADF side touch the slit glass. 
4	If both stopper pieces do not touch the slit glass, make adjustments using adjusting screws A and B alternately.
5	Perform steps 3 and 4 repeatedly until the two stopper pieces touch the slit glass at the same time.
6	Using the two screws, install the top cover (left).

[10] RADF Skew adjustment

1. Tool
   - Hexagonal wrench
   - Open-end wrench or flat-nose pliers
2. Adjustment method



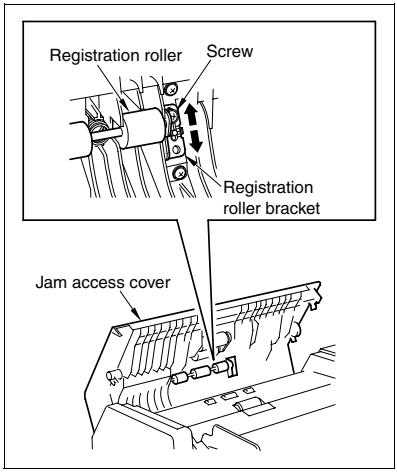
Step	Operation
1	Set A3 paper into the upper tray.
2	Set the adjustment chart on the RADF, make a copy, and check the skew. Standard value: within ±0.3%  Skew pattern A | Skew pattern B Perform the following adjustment if the skew is beyond the standard value.
3	Remove two screws for each of the two stoppers. 
4	Loosen the three screws illustrated. 

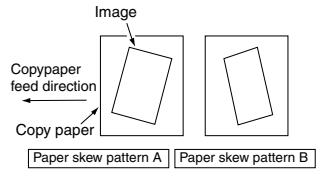
5	Open the RADF and loosen the six screws illustrated. 
6	Close the RADF and loosen the nut of skew adjustment screw.
7	Turn the skew adjustment screw to adjust the skew. For the skew pattern A: Turn the skew adjustment screw counterclockwise and move the RADF until it reaches the tip of the screw. For the skew pattern B: Turn the skew adjustment screw clockwise.
8	Make a copy to check the skew.
9	Fasten the skew adjustment screw with its nut.
10	Fasten the RADF securing screws (9, with 6 in front and 3 in rear).
11	Make adjustment by repeating steps 3 to 9 until the skew becomes within the standard value.
12	Use two screws to install each of the two stoppers.

[11] RADF paper skew adjustment

1. Face side of original paper skew adjustment

Note: Perform this adjustment after completing the RADF skew adjustment described in the previous page.

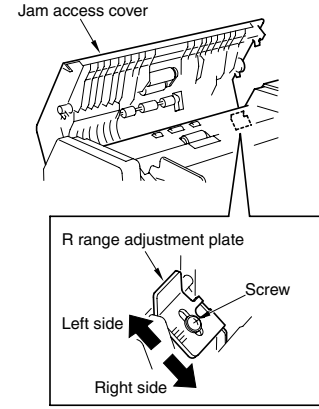


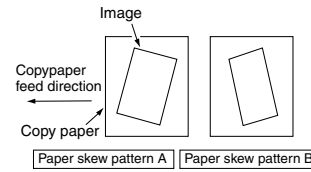
Step	Operation
1	Make a copy in the single sided to single sided copy mode, then check the skew of the original. (Either pattern A or B) 
2	Open the Jam access cover.
3	Loosen the retaining screw to release the registration roller bracket.

4	Move the registration roller bracket one calibration in the direction below according to the paper skew pattern. For skew in pattern A: Move the registration roller bracket downwards (direction down with original feed flow). For skew in pattern B: Move the registration roller bracket upwards (direction up towards original feed flow).
5	Repeat steps 2 to 4 unitl the original skew is within specified range (0.5% or less).

Specified range: Paper skew ±0.5% or less (Paper skew in the paper feed direction)

2. Back side of original paper skew adjustment



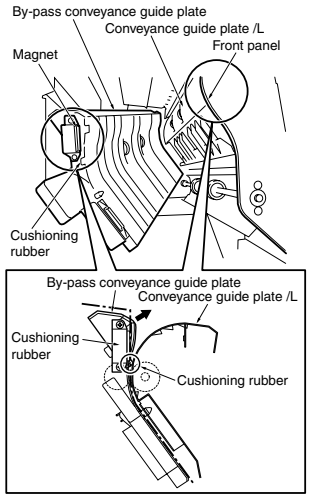
Step	Operation
1	Make a copy in the double sided - single sided copy mode, then check the skew of the original. (Either pattern A or B) 
2	Open the Jam access cover.
3	Loosen the set screw and release the R range adjustment plate.
4	Move the R range adjustment plate one calibration in the direction below according to the paper skew pattern. For skew in pattern A: Move the R range adjustment plate to left side. For skew in pattern B: Move the R range adjustment plate to right side.
5	Repeat steps 2 to 4 until the original skew is within specified range (0.5% or less).

Specified range: Paper skew ±0.5% or less (Paper skew in the paper feed direction)

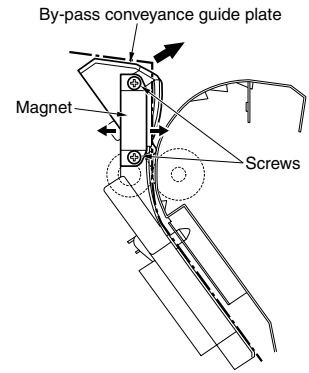
[12] FNS Adjusting the magnets on the by-pass conveyance guide plate

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

Step	Operation
1	Open the front door.
2	When the magnet on the by-pass conveyance guide plate is stuck to the front panel, check whether the stopping piece of the plate makes contact with the conveyance guide plate /L. 
3	If the stopping piece of the by-pass conveyance guide plate does not make contact with the conveyance guide plate /L, perform the following adjustment:

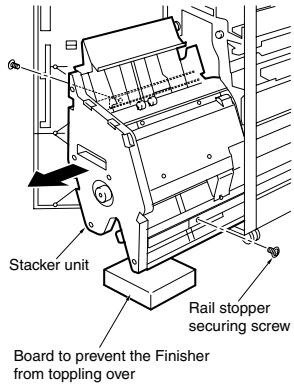
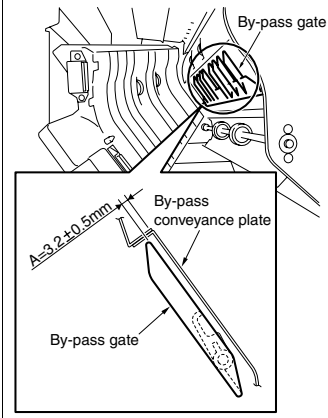
b. Adjustment

Step	Operation
1	Loosen the two screws securing the magnet.
2	Adjust the by-pass conveyance guide plate to the direction indicated by the arrow, and press it against the conveyance guide plate /L.
3	Adhere the magnets to the front panel and retighten the magnet securing screws. 
4	Close the front door.

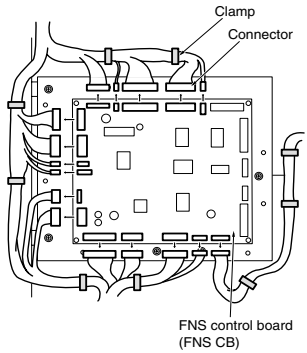
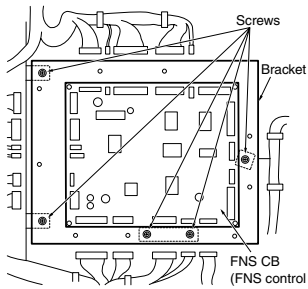
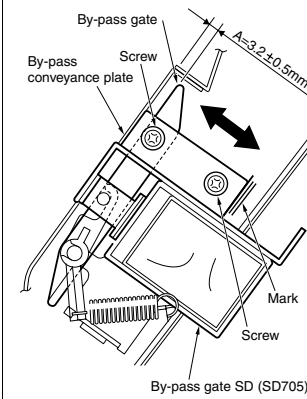
[13] FNS adjusting the by-pass gate

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Open the front door.
2	Draw out the stacker unit.
3	Remove the 2 screws securing the rail stopper, and pull out the stacker unit even further. **Caution:** To prevent the finisher from toppling over, place a board or the like to support the pulled-out unit. 
4	Open the by-pass conveyance guide plate.
5	When the by-pass gate (SD705) is OFF, check the gap between the by-pass gate and the by-pass conveyance plate is within the standard value. Specifications: A=3.2±0.5mm 
6	If the gap is not within the standard value, perform the following adjustment.

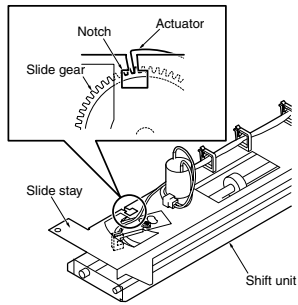
b. Adjustment

Step	Operation
1	Take off the rear cover.
2	Remove all cable assembly from the connectors and clamps connecting to FNS CB (FNS control board). 
3	Remove five screws and detach the FNS control board (FNS CB) together with its bracket. 
4	Loosen two screws securing the by-pass gate SD (SD705) and adjust the position of SD705 so that the gap between the by-pass gate and by-pass conveyance plate becomes within the standard value. 
5	Reinstall the parts in the opposite sequence to removal.

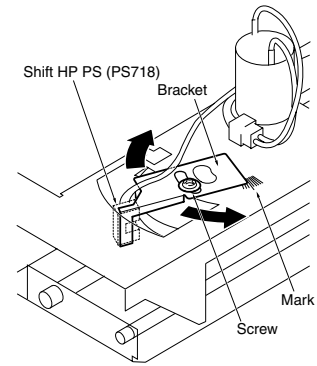
[14] FNS Adjusting the Shift Position

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

Step	Operation
1	Remove the following parts. • Top cover or option PI (if installed) • Top cover /2
2	Power on the main body and drive the roller shift (M702) using the 47 mode (code 75-2/75-3).
3	At the both HP (home position) and shift position, check whether the edge of the actuator for the slide gear fits into the notched hole of the slide stay. 
4	If the edge of the actuator for the slide gear does not fit into the notched hole of the slide stay, perform the following adjustment:

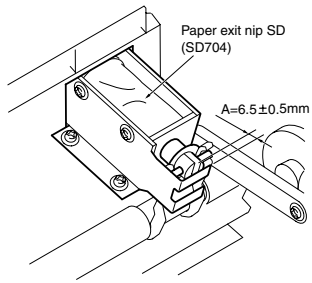
b. Adjustment

Step	Operation
1	Loosen the screw fastening the bracket for the roller shift HP PS (PS718), and shift the bracket to adjust the amount of discrepancy using the mark as a guide. 
2	When the position is confirmed, fasten the screw securing the bracket.
3	Reassemble in the opposite sequence to removal.

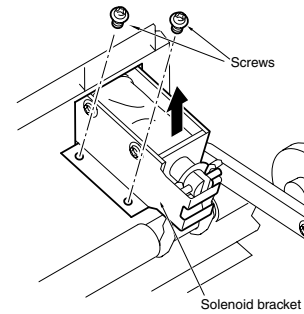
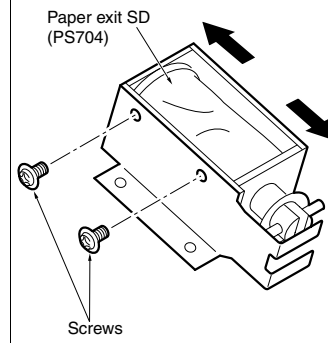
[15] FNS Adjusting the paper exit solenoid

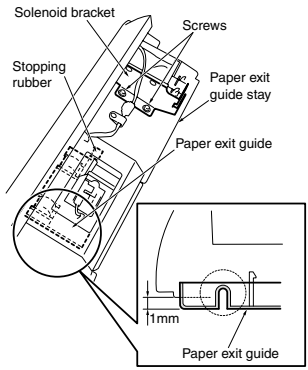
1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Remove the following parts. • Top cover /1 or option PI (if installed) • Top cover /2 • Rear cover
2	Power on the main body, and turn on the paper exit solenoid (SD704) using the 47 mode (code 75-31).
3	With the paper exit solenoid (SD704) ON, check whether the gap between the plunger of solenoid and the stopper of the bracket is within the spec value. Spec value: A=6.5±0.5mm 
4	If the gap is out of spec, perform the following adjustment.

b. Adjustment

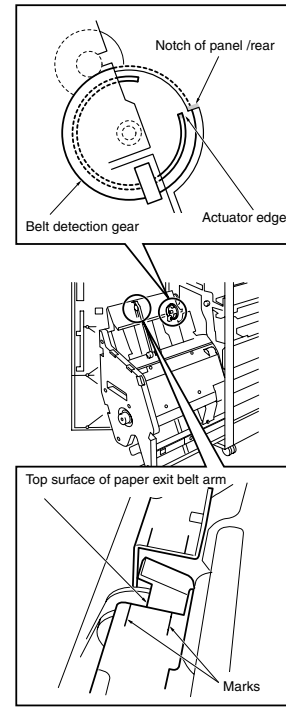
Step	Operation
1	Remove two screws securing the solenoid bracket and remove the solenoid together with the bracket. 
2	Loosen the 2 screws holding the solenoid, move the solenoid to adjust its position, and retighten the screws. Spec value:A=6.5±0.5mm 

Step	Operation
3	Place the solenoid to its original position, and tighten the screw securing the solenoid bracket at the position where the paper exit guide makes contact with the cushioning rubber of the paper exit guide stay. **Caution:** Make sure that the difference in height between the paper exit guide and the paper exit guide stay is 1mm and greater. 
4	Reassemble in the opposite sequence to the removal.

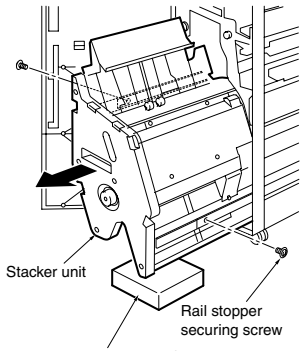
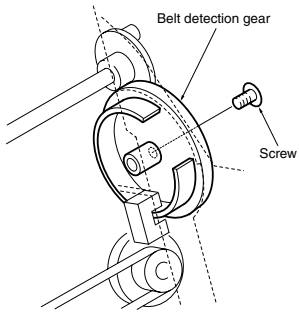
[16] FNS Adjusting the mount location of the paper exit arm

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

Step	Operation
1	Open the front door and pull out the stacker unit.
2	When aligning the actuator edge of the belt detection gear with the notch of panel /rear, check whether the top surface of paper exit belt arm is positioned in the middle of the two marks. 
3	Perform the adjustment if it is out of spec.

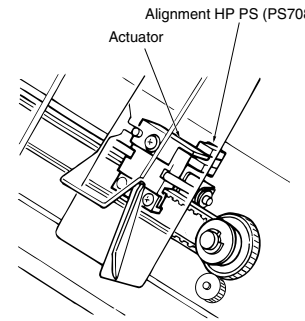
b. Adjustment

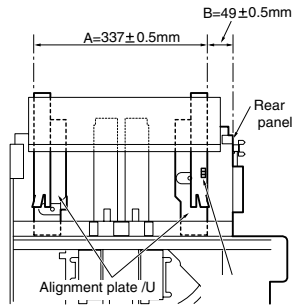
Step	Operation
1	Remove the two screws securing the rail stopper and pull out the stacker unit even further. To prevent the Finisher from toppling over, place a board or the like to support the pulled-out unit. 
2	Remove the screw of the belt detection gear, align the paper exit belt arm with the specified position, and align the detection gear with the specified position to secure it. 
3	Reassenble in the opposite sequence to the removal.

[17] FNS Adjusting the mount location of the alignment plates / U

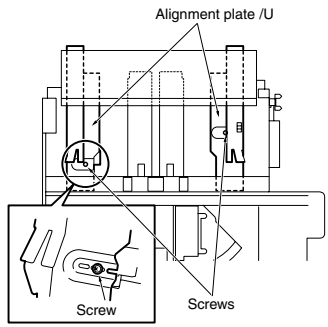
1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Power on the main body, then power it off after the Finisher initial operation is finished.
2	Open the front door and pull out the stacker unit.
3	Check whether the actuator of the alignment HP/U (PS708) is aligned with the home position. 

Step	Operation
4	Check whether the distances A and B for the alignment plate /U are within specification. Spec values:A=337±0.5mm(within) B=49±0.5 
5	If they are out of spec, perform the following adjustment:

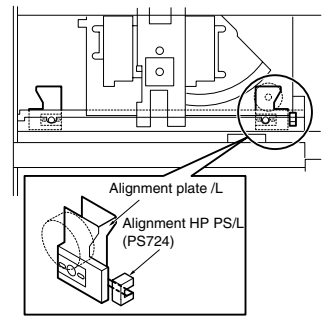
b. Adjustment

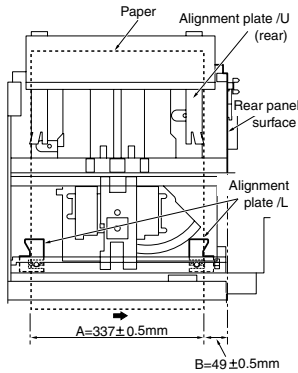
Step	Operation
1	Loosen the two screws and perform the adjustment so that the mount location of the alignment plate /U are within specification. 

[18] FNS Adjusting the mount location of the alignment plates / L (FN-6 only)

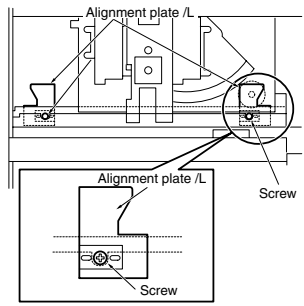
1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Make sure that "Adjusting the mount location of the alignment plates / U" is finished.
2	Power on the main body, drive the motor(s) using the following codes in the 47 mode, and then power the machine off. • Code 75-8: Alignment /U (M705) HP search • Code 75-21: Alignment /L (M716) HP search • Code 75-40: Stopper (M718) positioning shift (larger than A4R)
3	Open the front door and pull out the stacker unit.
4	Take off the stapler unit cover.
5	Check whether the actuators for the alignment HP/ U (PS705) and the alignment HP/ L (PS724) are aligned with the home position. 

Step	Operation
6	Load paper sized A4R or larger, put the paper against the alignment plate /U (rear) and the alignment plate /L (rear) and check whether the paper is plumb. In addition, check whether the distances A and B for the alignment plate /L are within specification. Spec values:A=337±0.5mm(within) B=49±0.5 
7	If they are out of spec, perform the following adjustment:

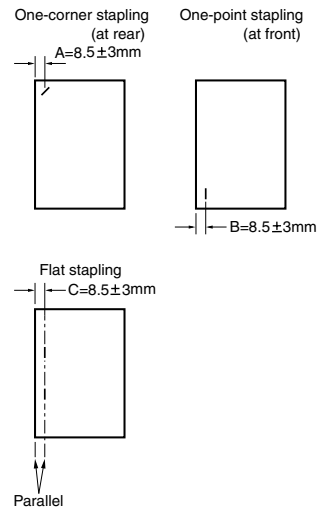
b. Adjustment

Step	Operation
1	Loosen the two screws and perform the adjustment so that the mount location of the alignment plate /L are within specification. 

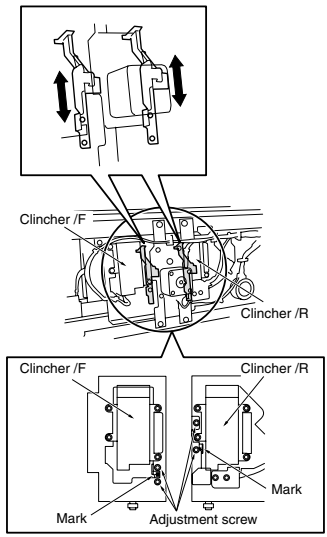
[19] FNS Adjusting the stapling position (Flat stapling)

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Perform the following stapling actually and check whether they are within specification. In the case of flat stapling, check whether the paper edge is parallel to the virtual line running between the staplers. 
2	If they are out of spec or not parallel, perform the following adjustment:

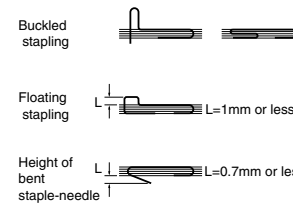
b. Adjustment

Step	Operation
1	Open the front door and pull out the stacker unit.
2	Take off the stapler unit cover.
3	Loosen the adjustment screws for the clincher /F and Clincher /R and perform adjustment using marks as a guide. 
4	Execute stapling to confirm that the stapling is within the specification range.

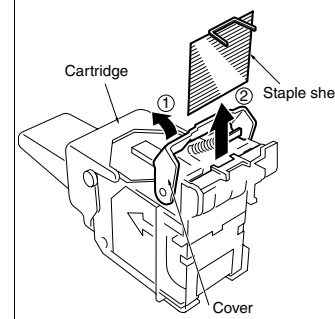
[20] FNS Adjusting the stapler vertical positioning

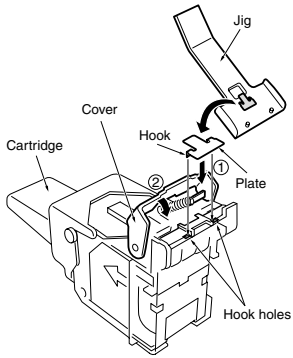
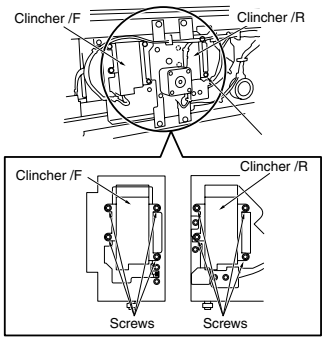
1. Tool
   - Screwdriver (Phillips)
   - Jig
2. Adjustment method

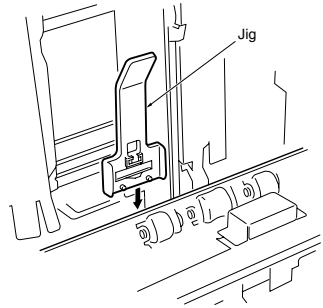
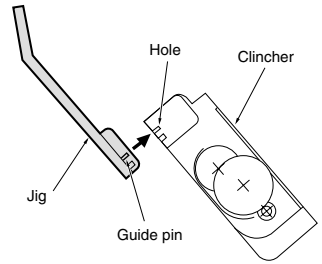
a. Preparation

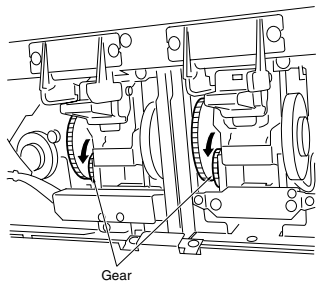
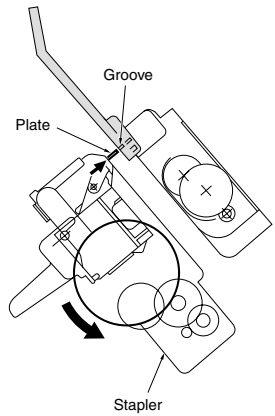
Step	Operation
1	Execute stapling and check for buckled staple-needles or clinching failure. **Caution:** When replacing or removing a clincher or stapler, perform adjustment after reinstalling. 
2	When any defect described above can be seen, perform the following adjustment:

b. Adjustment

Step	Operation
1	Open the front door and pull out the stacker unit.
2	Take off the stapler unit cover.
3	Remove the cartridge, open the cover, and then slide the staple sheet out. 

Step	Operation
4	Remove the plate from the jig, install it so that its hooks fit the hook holes, and then close the cover. 
5	Loosen the four screws for each clincher. 

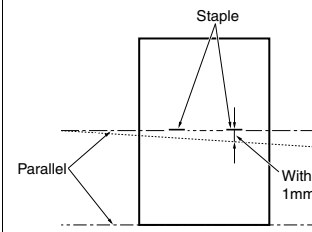
Step	Operation
6	Insert the two guide pins of the jig in the hole of the clincher. **Caution:** The positioning portion of the jig need not be engaged with the clincher completely.  

Step	Operation
7	Rotate the stapler gears downward. Adjust the clincher position so that the plate on the cartridge fits smoothly into the groove on the jig. Rotate the stapler gear further to fit the plate in the groove in the jig and the jig in the clincher unit completely.  
8	Tighten the four screws for each clincher.
9	Rotate the stapler gears upwards to remove the jig. **Caution:** When removing the jig, be careful not to break the myler of the clincher.
10	Remove the cartridge, detach the plate, insert the staple plate slide out on step3, and place the cartridge to its original position.
11	Check that the stapler operates properly.

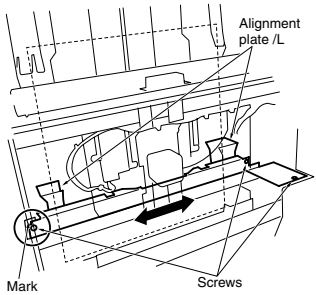
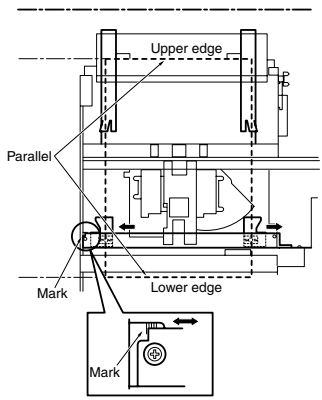
[21] FNS Adjusting the stapling position (stitch-and-fold) (FN-6 only)

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

Step	Operation
1	Execute stapling and check whether the paper edge is parallel to the virtual line connecting the two staples or whether the amount of discrepancy is within specification. Spec value: within 1mm for the amount of discrepancy 
2	If the amount of discrepancy for the booklet is out of spec, perform the following adjustment:

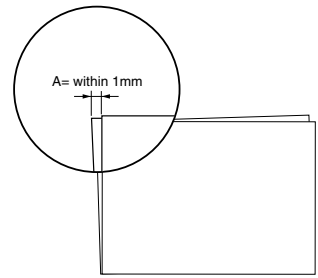
b. Adjustment

Step	Operation
1	Make sure that the "Adjusting the mount location of the alignment plates / U" and "Adjusting the mount location of the alignment plates / L" are finished.
2	Open the front door and pull out the stacker unit.
3	Take off the stapler unit cover.
4	Loosen the three screws securing the alignment plate and adjust it using the mark as a guide.  
5	After the adjustment, retighten the three screws, execute stapling, and then check that the aligned position is within the specification range.

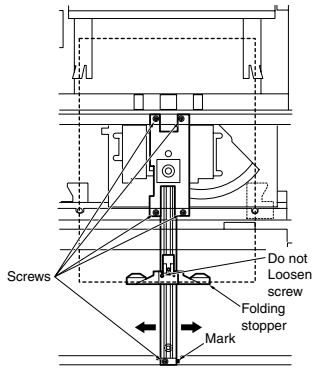
[22] FNS Adjusting the angle of the folding stopper (FN-6 only)

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

Step	Operation
1	Execute stapling using A3 paper and check whether the fold side discrepancy for A3 paper is within the limit. Limit: A= within 1mm 
2	If the amount of discrepancy is out of specification, perform the following adjustment:

b. Adjustment

Step	Operation
1	Open the front door and pull out the stacker unit.
2	Take off the stapler unit cover.
3	Loosen the five screws securing the folding stopper and adjust it using the mark as a guide. 
4	After the adjustment, retighten the five screws and execute stapling to check that the amount of discrepancy is within the specified limit.

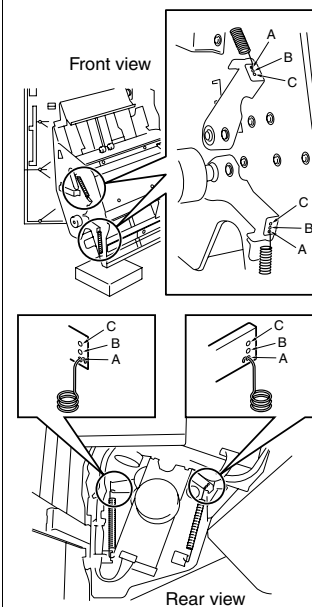
[23] FNS Adjusting the folding force (FN-6 only)

1. Tool
   - Flat-nose pliers
2. Adjustment method

a. Preparation

Step	Operation
1	If necessary, change the force and pressure of the folding rollers.

b. Adjustment

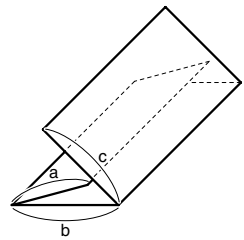
Step	Operation
1	Remove the rear cover.
2	Open the front cover and pull out the stacker unit.
3	Remove the stacker unit cover.
4	Change the mounting places of the two pressure springs for each of the front and rear. **Caution:** The four pressure springs should be hooked on the hole with the same character. 

Step	Operation
5	Install the rear cover and stacker unit cover, put the stacker unit away, and close the front cover.

[24] FNS Adjusting the three-holding positions (FN-6 only)

1. Tool
   - Screwdriver (Phillips)
2. Adjustment method

a. Preparation

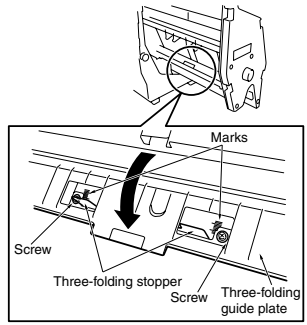
Step	Operation
1	Make sure that the "Adjusting the angle of the folding stopper" is finished.
2	Execute three-holding and check whether the three-holding positions are within specification. 

Folding positions	Reference value		Specification
	A4R	8.5x11	
a	93	86.4	±2
b	102	97	±2
c	102	97	±2

Unit:mm

Step	Operation
3	If the three-holding positions are out of spec, perform the following adjustment:

b. Adjustment

Step	Operation
1	Power on the main body. Use "7: Three-hold positions adjustment" from "6: Finisher adjustment" on the 36 Mode, adjust the first folded line (reference value a), and perform three-holding.
2	When the first folded line becomes within the spec value, open the front door and pull out the stacker unit.
3	Open the three-holding guide plate, loosen the two screws securing the three-holding stoppers, and adjust the stopper positions using the mark as a guide. 
4	After the adjustment, retighten the two screws and execute three-holding to check that the three-holding positions are within the specification.

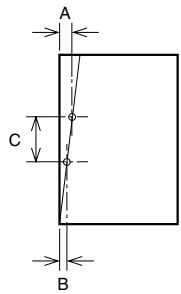
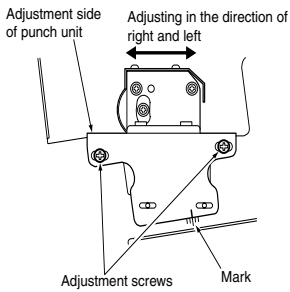
[25] PK Adjusting the tilt of the punch hole position

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Check the following items: • The finisher is connected to the main body. • The main body is loaded with the paper based on the punch specifications.
2	Check the skew of output paper in advance. • Slide the side guide plate and the rear guide plate for the main body's feed tray, and align the paper loaded on the main body's tray. • Check the skew by using the platen copy or adjustment mode.
3	To check the tilt of the punch hole position, make a sample copy in the punch mode.
4	Make three copies each in single side copy mode and double side copy mode with the punch mode to check the skew.

b. Adjustment

Step	Operation
1	Measure the position of the sampled punch holes to check the tilt of the position.  Tilt of the punch hole position: A-B (Difference in position of the two punch holes)/C (Distance of hole pitch)
2	Open the front cover.
3	Loosen the two adjustment screws of PK.
4	Using the mark scale as a guide, move the punch unit horizontally by the amount of tilt for the punch hole position. 1 scale: 0.5% 
5	Retighten the screws.
6	Make a sample copy of punch mode and recheck the tilt of the punch hole position.

[26] PK Adjusting the punch hole vertical position

Caution1: Perform this adjustment after finishing the adjustment for the tilt of the punch hole position.

Caution2: Complete the PK adjusting the punch hole vertical position feeding the paper from the by-pass tray first. Then, perform this adjustment feeding paper from the tray that is most frequently used.

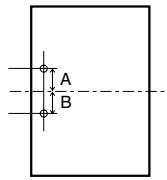
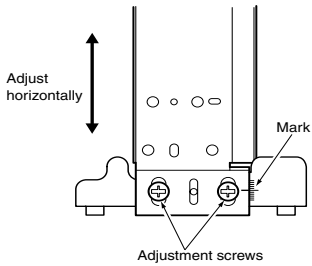
Caution3: If there is a difference in the punch hole vertical position, perform the centering adjustment for the trays of main body or PI.

1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Check the following items: • The finisher is connected to the main body. • The main body is loaded with the paper based on the punch specifications.
2	Check the skew of output paper in advance. Slide the side guide plate and the rear guide plate for the main body's feed tray, and align the paper loaded on the main body's tray.
3	Make three copies each in single side copy mode and double side copy mode with the punch mode to check the position of the holes.

b. Adjustment

Step	Operation
1	Fold the sample at the middle of the paper, check the position of each punch hole, and calculate the dimension to be adjusted.  Specified limit: (A-B) Error of position of the two punch holes))/2 **Reference:** For adjustment of the punch hole vertical position, the dimension of the punch hole vertical position can be adjusted by ±5mm. Adjusting the hole pitch is not allowed.
2	Open the front cover.
3	Loosen the two adjustment screws for PK.
4	Using the mark scale as a guide, move the punch unit vertically to 1/2 the distance of the above dimension. 
5	Retighten the screws.
6	Make a sample copy of punch mode and recheck the discrepancy of the punch hole vertical position.

[27] PI Centering Adjustment

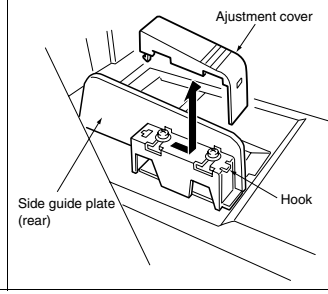
CAUTION: PI Centering adjustement must be performed on the upper tray first, then on the lower tray.
When it is necessary to slide the side guide plate (rear) a lot, perform step 11 before step 3 and subsequent procedures.

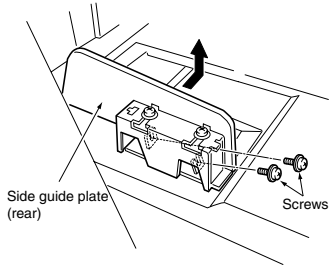
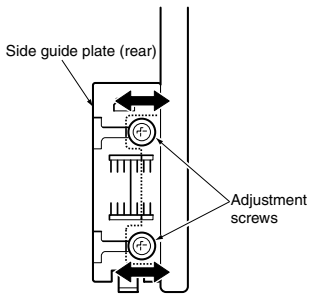
1. Tool
   - Screwdriver (Phillips)
   - Scale
2. Adjustment method

a. Preparation

Step	Operation
1	Check that PK adjusting the punch hole vertical position has been completed.
2	Perform Tray 1/2/3 centering adjustment.
3	Feed the three sheets from PI with the punch mode.
4	Check the position of each punch hole on the three sheets.

b. Adjustment

Step	Operation
1	Release the hook and remove the adjustment cover of the side guide plate (rear).. 

Step	Operation
2	When adjusting for the lower tray, remove two screws and slide rightward to remove the side guide plate (rear). 
3	Loosen two adjustment screws securing the side guide plate (rear), and slide it by the twice the difference. (ie: If there is 1.5mm difference in direction of rear side, slide by 3mm to rear side.) 
4	Fasten the two adjustment screws securely to fix the side guide plate (rear).
5	In case of the lower tray, install the side guide plate (rear).
6	Set a sheet on the tray and fit the side guide plate (rear) to the sheet to check that the side guide plate (rear) is parallel to the sheet.
7	Feed the three sheets from PI with the punch mode.
8	Check the position of each punch hole.
9	Repeat step 2 to 8 until the difference of the holes is improved.
10	Install the adjustment cover to the side guide plate (rear).

Step	Operation
11	Set A4R size paper to the tray and perform the cover sheet tray size adjustment in 36 mode.

3

SERVICE

Main Precautions for Maintenance

1. Points to be confirmed before maintenance
   Before starting maintenance, ask a user and collect information about troubles that occurred on the machine before the maintenance and the conditions of the machine to grasp key points for the maintenance.

2. Copy sample
   Be sure to make copy samples at the start and the end of maintenance for checking images.

3. Drum
   a) Never expose the drum to the sunlight. Be also careful not to expose a drum to indoor light as far as possible.
      When a drum unit or a drum is out of the machine, never fail to cover it with a drum cover.
   b) When replacing a drum, toner guide roller or cleaning blade, refer to the Item removing and installing a cleaning blade.

4. When replacing the drum and developer, must perform neccessary adjustment by refering to the List of Adjustment Items.

5. After having completed maintenance work, must reset the PM counter (using the 25 mode).

6. When replacing the fixing unit cleaning web, developer, and drum must reset the fixing unit cleaning web counter(using the 36 mode).

7. When replacing a toner cartridge, wait until the toner supply LED on the operation panel flashes before the replacement.

⚠**Caution: Turn the main power switch (SW1) off and pull out the power pulg without fail before the work of maintenance.**

SERVICE SCHEDULE

[1] Service Schedule

	Service item	Number of copies	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	Service count
Main body	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 500,000 copies			●		●		●		●		●		●		●	●	●		●			9 times
	Periodic check (II)	Every 1,000,000 copies					●				●				●				●					4 times
	Periodic check (III)	Every 2,000,0000 copies									●								●					2 times
	Periodic check (IV)	Every 2,500,000 copies											●											1 times
	Periodic check (V)	Every 4,000,000 copies																	●					1 times
RADF EDH	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 500,000 copies			●		●		●		●		●		●		●		●		●			9 times
	Periodic check (II)	Every 1,500,000 copies							●						●						●			3 times
FNS FN-112	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 1,000,000 copies					●				●				●				●					4 times
	Periodic check (II)	Every 2,500,000 copies											●											1 times
FNS FN-6	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 1,000,000 copies					●				●				●				●					4 times
	Periodic check (II)	Every 2,500,000 copies											●											1 times
LCT C-403/404	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 1,000,000 copies					●				●				●				●					4 times
	Periodic check (II)	Every 4,000,000 copies																	●					1 times
PI Cover Inserter B	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times
	Periodic check (I)	Every 500,000 copies			●		●		●		●		●		●		●		●		●			9 times
	Periodic check (II)	Every 1,000,000 copies					●				●				●				●					4 times
	Periodic check (III)	Every 3,000,000 copies													●									1 times
PK PK-2	Maintenance	Every 250,000 copies		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		19 times

[2] Maintenance Items

1. Main body (Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Preparation	(1) Image check			●			
2	Drum unit	(1) Charging control plate 4024-1006-xx*	1				●	
		(2) Charging wire 4024-1020-xx*	1				●	
		(3) Charging corona unit (back plate and peripheral section, PCL)		●				
		(4) Charger cleaning base 4024-2486-xx*	1				●	
		(5) Charger slide block 4024-2485-xx*	1				●	
		(6) Charger cleaning block /U 4024-1007-xx*	1				●	
		(7) Resin ring (ϕ2) 4014-1750-xx*	1				●	
		(8) Charger cleaning block /L 4024-1008-xx*	1				●	
		(9) Drum cartridge, bottom plate of the developing unit, toner control sensor, separation claw		●				
		(10) Toner collection screw A		●				
		(11) Toner guide roller 4024-1005-xx*	1				●	
		(12) Cleaning blade (36 mode blade setting mode) 4024-1004-xx*	1				●	
3	Developing unit	(1) Developing bias armature		●				
		(2) Developer (25 mode counter resetting)	1				●	
		(3) Developing unit		●				
4	Transfer / separation corona	(1) Transfer separation corona unit (front and rear block), guide rail, separation bridge, entrance guide plate, lightning protection sheet, back plate		●				
		(2) Discharge wire 4024-1010-xx*	3				●	
		(3) Transfer cleaning assembly 4024-1011-xx*	1				●	
		(4) Separation cleaning assembly 4024-1019-xx*	1				●	
		(5) Resin ring (ϕ2) 4014-1750-xx*	2				●	
		(6) Transfer presser rubber 4024-3053-xx*	3				●	
5	Toner supply	(1) Cartridge holder member		●				
6	Conveyance unit	(1) Conveyance section upper surface		●				
		(2) Conveyance belt		●				
		(3) TSL cover member		●				

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
7	Registration	(1) Paper dust removing brush		●				
		(2) 2nd paper feed roller		●				
8	Drive section and filter	(1) Ozone filter K 4014-1795-xx*	1				●	
		(2) Developing suction filter 4024-2001-xx*	1				●	
9	Paper exit unit	(1) Sensor (one section)		●				
		(2) Roller (two sections)		●				
10	ADU	(1) Roller cleaning		●				
		(2) Reverse/exit roller		●				
		(3) ADU reverse roller		●				
		(4) ADU conveyance roller /1-4		●				
		(5) ADU registration roller		●				
		(6) Sensors		●				
		(7) Gate sensor (two points)		●				
		(8) ADU horizontal conveyance sections (four points)		●				
		(9) ADU reverse section (one point)		●				
10	ADU	(10) Gears				●		
11	Paper feed section	(1) Sensor (three points/tray)		●				
		(2) Gears (double feed prevention section)				●		
		(3) Conveyance/driven roller (paper feed)		●				
		(4) Feed roller/paper feed conveyance roller		●				
		(5) Double feed prevention roller		●				
12	By-pass feed section	(1) Sensor (four points)		●				
		(2) Gears				●		
		(3) Section peripheral of the by-pass feed unit		●				
		(4) Feed roller/paper conveyance roller		●				
		(5) Double feed prevention roller		●				
13	Scanner section	(1) Original glass (including slit glass)		●				
		(2) Exposure lamp		●				
		(3) Reflector		●				
		(4) Lens		●				
		(5) 1st to 3rd mirrors		●				
		(6) APS sensor		●				
		(7) Photo interrupter		●				
		(8) Optical guide rail		●				
14	Writing section	(1) Dust-proof glass (external)			●			

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
15	Fixing unit	(1) Fixing upper roller		●				
		(2) Fixing lower roller		●				
		(3) Fixing claw (L)		●				
		(4) Paper exit roller		●				
		(5) Paper exit conveyance roller (right) and guide rib		●				
		(6) Fixing unit entrance and exit guide plate		●				
15	Fixing unit	(7) Fixing temperature sensor /2		●				
		(8) Decurler		●				
		(9) Fixing gear				●		Heatproof grease
		(10) Fixing web unit (25 mode counter resetting) 4024-1001-xx*	1				●	
		(11) Fixing claw (U) 4024-1014-xx*	6				●	
		(12) Heat insulating sleeve				●		
16	Vertical conveyance	(1) Horizontal conveyance roller	2	●				
		(2) Sensor	5	●				
17	Final check	(1) W.U.T. check			●			
		(2) Peripheral and exterior cleaning		●				
		(3) Image and paper through check			●			
		(4) PM counter resetting (25 mode)			●			

2. RADF [EDH](Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Preparation	(1) Paper through check			●			
2	Paper feed section	(1) Size detection sensor/1	1	●				
		(2) Size detection sensor/2	1	●				
		(3) Registration sensor	1	●				
		(4) Feed roller	1	●				
		(5) Paper feed roller rubber	1	●				
		(6) Double feed prevention roller rubber	1	●				
		(7) Cleaning pad	1	●				
		(8) Registration roller	1	●				
3	Conveyance section	(1) Read sensor	1	●				
		(2) Skew sensor (F)	1	●				
		(3) Skew sensor (R)	1	●				
		(4) Double side registration sensor	1	●				
		(5) Read roller (F)	1	●				
		(6) Read roller (R)	1	●				
		(7) Platen guide	1	●				
		(8) Reverse conveyance roller/1	1	●				
		(9) Reverse conveyance roller/2	1	●				
4	Paper exit section	(1) Paper exit roller	1	●				
5	Final check	(1) Paper through check			●			
		(2) Exterior cleaning		●				

3. FNS [FN-112] (Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Clea-ning	Inspe-ction	Lubric-ation	Replace-ment	
1	Preparation	(1) Paper through check			●			
2	Conveyance section	(1) Conveyance roller		●				
		(2) Paper exit roller/A (sponge roller) 4594-2074-xx*	10				●	
		(3) Conveyance roller/4 (sponge roller) 4024-2006-xx*	4				●	
3	Drive section	(1) Main drive unit			●	(●)		*1
		(2) Tray up/down unit			●	(●)		*1
		(3) Shift drive unit			●	(●)		*1
		(4) Paper exit drive unit			●	(●)		*1
		(5) Staple unit			●	(●)		*1
4	Stapler unit	(1) Staple cartridge (5,000 staples/cartridge)	2		●		(●)	Replace as neces-sary
5	Exterior	(1) Exterior cleaning		●			(●)	*2
6	Final check	(1) Paper through check			●			*3

*1 If abnormal sound is heard due to insufficient oil, lubricate it.
*2 Clean the edge of the sponge roller at the left side.
*3 Check to see that the upper and lower positions are properly set.

4. FNS [FN-6] (Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Clea-ning	Inspe-ction	Lubric-ation	Replace-ment	
1	Preparation	(1) Paper through check			●			
2	Conveyance section	(1) Conveyance roller		●				
		(2) Paper exit roller/A (sponge) 4594-2074-xx*	10				●	
		(3) Conveyance roller/4 (sponge) 4024-2006-xx*	4				●	
3	Drive section	(1) Main drive unit			●	(●)		*1
		(2) Tray up/down unit			●	(●)		*1
		(3) Shift drive unit			●	(●)		*1
		(4) Paper exit drive unit			●	(●)		*1
		(5) Staple unit			●	(●)		*1
		(6) Folding unit			●	(●)		*1
4	Folding unit	(1) Folding roller		●				
5	Stapler unit	(1) Staple cartridge (5,000 staples/cartridge)	2		●		(●)	Replace as neces-sary
6	Exterior	(1) Exterior cleaning		●				*2
7	Final check	(1) Paper through check			●			*3

*1 If abnormal sound is heard due to insufficient oil, lubricate it.
*2 Clean the edge of the sponge roller at the left side.
*3 Check to see that the upper and lower positions are properly set.

5. LCT [C-403/404](Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Preparation	(1) Paper through check			●			
2	Inside of machine	(1) Sensors		●				
		(2) Gears				●		
		(3) Conveyance roller/driven roller		●				
		(4) Feed roller		●				
		(5) Paper feed conveyance roller		●				
		(6) Double feed prevention roller		●				
3	Final check	(1) Paper through check			●			
		(2) Exterior cleaning		●				

6. Cover Inserter B (Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Conveyance section	(1) Conveyance roller		●				
2	Paper feed section	(1) Feed roller		●		(●)		*1
		(2) Paper feed conveyance roller		●		(●)		*1
		(3) Double feed prevention roller		●		(●)		*1
3	Final check	(1) Paper through check			●			
		(2) Exterior cleaning		●				

*1 If abnormal sound is heard due to insufficient oil, lubricate it.

7. PK-2 (Every 250,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Punch unit main body	(1) Punch die		●				
2	Punch dust collection section	(1) Punch dust box (for punch dust dump)		●				
		(2) Punch dust detection sensor		●				
3	Final check	(1) Paper through check			●			
		(2) Internal cleaning		●				

[3] Main Body Periodic Inspection Items

1. Periodic check (I) (Every 500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Fixing unit	(1) Fixing roller (U) 4024-1012-xx*	1				●	
		(2) Heat insulating sleeve (U) 4014-3007-xx*	2			●	●	Apply Tri flow oil when replacing the sleeve.
		(3) Upper roller bearing 4014-1747-xx*	2				●	
		(4) Fixing roller (L) 4024-1013-xx*	1				●	
		(5) Fixing claw (L) 4024-1015-xx*	3				●	
		(6) Fixing rolling bearing 4024-2005-xx*	2				●	
2	Drum unit	(1) Drum separation claw 4024-1009-xx*	3				●	
		(2) Drum replacement (25 mode counter resetting)	1				●	
3	Paper feed unit	(1) Feed roller assembly 4024-2058-xx*	3				●	Actual replacement count: 125 K feeds
		(2) Double feed prevention roller rubber 4024-2035-xx*	3				●	
4	By-pass feed unit	(1) Conveyance roller rubber (by-pass feed) 4024-1030-xx*	1				●	Actual replacement count: 70 K feeds
		(3) Double feed prevention roller rubber (manual feed) 4024-1030-xx*	1				●	

2. Periodic check (II) (Every 1,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed unit	(1) Paper feed oscillate roller assembly 4024-2056-xx*	3				●	Actual replacement count: 800 K feeds
2	By-pass feed unit	(1) Paper feed roller rubber (manual feed) 4024-1029-xx*	1				●	Actual replacement count: 140 K feeds
3	Fixing unit	(1) Fixing lamp/1 4024-2085-xx*	1				●	
		(2) Fixing lamp/2 4024-2088-xx*	1				●	
		(4) Decurler roller 4024-2713-xx*	1				●	
		(5) ADU conveyance bearing 4024-2374-xx*	2				●	
		(6) Bearing/1 4024-2188-xx*	2				●	
4	Drive unit	(1) Fixing drive gear 4024-2360-xx*	1				●	

3. Periodic check (III) (Every 2,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Drum unit	(1) Drum separation claw solenoid 4024-1035-xx*	1				●	
2	Paper feed drive unit	(1) Vertical conveyance clutch/ 1,2 4024-1028-xx*	2				●	Actual replacement count: 2 million feeds
3	Second paper feed unit	(1) 2nd paper feed clutch 4024-1028-xx*	1				●	
4	Transfer/separation corona unit	(1) Transfer/separation corona unit 4024-1018-xx*	1				●	

4. Periodic check (IV) (Every 2,500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Drum unit	(1) Toner control board unit 4024-1017-xx*	1				●	
2	Charging corona unit	(1) Charging corona unit (including PCL) 4024-1022-xx*	1				●	
3	2nd paper feed unit	(1) TSL 4024-2093-xx*	1				●	
		(2) Drum driving bearing 4024-2190-xx*	2				●	
		(3) Registration roller (U) 4024-2627-xx*	1				●	
4	Developing unit	(1) Developing unit 4024-1024-xx*	1				●	
5	Fixing unit	(1) Upper roller error detection sensor 4024-1021-xx*	1				●	
6	ADU	(1) Registration shaft (L) 4024-2410-xx*	2				●	
		(2) Registration shaft (U) 4024-2411-xx*	2				●	
		(3) ADU registration roller (U) 4024-2671-xx*	1				●	
		(4) ADU registration roller (L) 4024-2672-xx*	1				●	
7	Conveyance unit	(1) TSL cover assembly 4024-2622-xx*	1				●	

5. Periodic check (V) (Every 4,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Paper feed clutch (tray 1 to 3) 4024-1028-xx*	3				●	Actual replacement count: 2 million feeds
		(2) Conveyance clutch (tray 1 to 3) 4024-1028-xx*	3				●	

[4] RADF [EDH]

1. Periodic check (I) (Every 500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Feed roller rubber 4594-1009-xx*	1				●	Actual replacement count: 200 K feeds
		(2) Paper feed roller rubber 4594-1010-xx*	1				●	
		(3) Double feed prevention roller rubber 4594-1011-xx*	1				●	

2. Periodic check (II) (Every 1,500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Double feed prevention roller 4594-1012-xx*	1				●	Actual replacement count: 600 K feeds

[5] FNS

[FN-112]

1. Periodic check (I) (Every 1,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Stapler unit	(1) Stapler unit 4594-1001-xx*	2				●	Actual replacement count: 200 K feeds each

2. Periodic check (II) (Every 2,500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Drive unit	(1) FNS up/down motor 4594-2206-xx*	1				●	Actual replacement count: 2.5 million feeds

[FN-6]

1. Periodic check (I) (Every 1,000,000 copies))

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Stapler unit	(1) Stapler unit 4594-1001-xx*	2				●	Actual replacement count: 200 K staples each

2. Periodic check (II) (Every 2,500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Drive unit	(1) FNS up/down motor 4594-2206-xx*	1				●	Actual replacement count: 2.5 million feeds

[6] LCT [C-403/404]

1. Periodic check (I) (Every 1,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Inside of machine	(1) Feed roller 4014-3029-xx*	1				●	Actual replacement count: 500 K feeds each
		(2) Paper feed conveyance roller 4014-3028-xx*	1				●	
		(3) Double feed prevention roller 4014-3029-xx*	1				●	

2. Periodic check (II) (Every 4,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Inside of machine	(1) Feed clutch 4024-1028-xx*	1				●	Actual replacement count: 2 million feeds
		(2) Conveyance clutch 4024-1028-xx*	1				●	

[7] PI [Cover Inserter B]

1. Periodic check (I) (Every 500,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Feed roller assembly/B 4014-3153-xx*	2				●	Actual replacement count: 100 K feeds
		(2) Double feed prevention roller assembly 4594-1004-xx*	2				●	

2. Periodic check (II) (Every 1,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Feed roller assembly/A 4014-3152-xx*	2				●	Actual replacement count: 200 K feeds each

3. Periodic check (III) (Every 3,000,000 copies)

NO	Classification	Service item	Number of parts replaced	Implementation classification				Note
				Cleaning	Inspection	Lubrication	Replacement	
1	Paper feed section	(1) Torque limiter 4594-1005-xx*	2				●	Actual replacement count: 600 K feeds

[8] Replacement parts list

1. Main body

No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
1	Maintenance (Every 250,000 copies)	Charging control plate	4024-1006-xx*	1	250,000		6
		Charging wire	4024-1020-xx*	1	250,000		22
		Charger cleaning base	4024-2486-xx*	1	250,000		
		Charger slide block	4024-2485-xx*	1	250,000		
		Charger cleaning block /U	4024-1007-xx*	1	250,000		7
		Resin ring (ϕ2) (charging corona)	4014-1750-xx*	1	250,000		
		Charger cleaning block /L	4024-1008-xx*	1	250,000		8
		Toner guide roller	4024-1005-xx*	1	250,000		5
		Cleaning blade	4024-1004-xx*	1	250,000		4
		Developer	-	1	250,000		2
		Discharge wire	4024-1010-xx*	3	250,000		10
		Transfer cleaning assembly	4024-1011-xx*	1	250,000		11
		Separation cleaning assembly	4024-1019-xx*	1	250,000		21
		Resin ring (ϕ2) (transfer/separation corona unit)	4014-1750-xx*	2	250,000		
		Ozone filter K	4014-1795-xx*	1	250,000		24
		Developing suction filter	4024-2001-xx*	1	250,000		
		Fixing web unit	4024-1001-xx*	1	250,000		1
		Fixing claw /U	4024-1014-xx*	6	250,000		14
		Transfer presser rubber	4024-3053-xx*	3	250,000		
2	Periodic check (I) (Every 500,000 copies)	Fixing roller /U	4024-1012-xx*	1	500,000		12
		Insulating sleeve /U	4014-3007-xx*	2	500,000		16
		Upper roller bearing	4014-1747-xx*	2	500,000		17
		Fixing roller /L	4024-1013-xx*	1	500,000		13
		Fixing claw /L	4024-1015-xx*	3	500,000		15
		Fixing rolling bearing	4024-2005-xx*	2	500,000		
		Drum separation claw	4024-1009-xx*	3	500,000		9
		Drum	-	1	500,000		3
		Feed roller assembly (Tray 1 to 3)	4024-2058-xx*	3		125,000	30,35,40
		Double feed prevention roller rubber (Tray 1 to 3)	4024-2035-xx*	3		125,000	30,35,40
		Paper feed conveyance roller rubber (by-pass feed)	4024-1030-xx*	1		70,000	50
		Double feed prevention roller rubber (by-pass feed)	4024-1030-xx*	1		70,000	50

No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
3	Periodic check (II) (Every 1,000,000 copies)	Paper feed oscillate roller assembly (Tray 1 to 3)	4024-2056-xx*	3		800,000	29,34,39
		Paper feed rubber (by-pass feed)	4024-1029-xx*	1		140,000	49
		Fixing lamp/1	4024-2085-xx*	1	1,000,000		
		Fixing lamp/2	4024-2088-xx*	1	1,000,000		
	Decurler	Decurler roller	4024-2713-xx*	1	1,000,000		
		ADU conveyance bearing	4024-2374-xx*	2	1,000,000		
		Bearing/1	4024-2188-xx*	2	1,000,000		
		Fixing drive gear	4024-2360-xx*	1	1,000,000		
4	Periodic check (III) (Every 2,000,000 copies)	Drum separation claw solenoid	4024-1035-xx*	1	2,000,000		103
		Vertical conveyance clutch/1,2	4024-1028-xx*	2		2,000,000	61,62
		2nd paper feed clutch	4024-1028-xx*	1	2,000,000		64
		Transfer/separation corona unit	4024-1018-xx*	1	2,000,000		20
5	Periodic check (IV) (Every 2,500,000 copies)	Toner control board unit	4024-1017-xx*	1	2,500,000		19
		Charging unit (including PCL)	4024-1022-xx*	1	2,500,000		25
		TSL	4024-2093-xx*	1	2,500,000		
		Drum drive bearing	4024-2190-xx*	2	2,500,000		
		Registration roller /U	4024-2627-xx*	1	2,500,000		
		Developing unit	4024-1024-xx*	1	2,500,000		27
		Upper roller error detection sensor	4024-1021-xx*	1	2,500,000		23
		Registration bearing /L	4024-2410-xx*	2	2,500,000		
		Registration bearing /U	4024-2411-xx*	2	2,500,000		
		ADU registration roller /U	4024-2671-xx*	1	2,500,000		
		ADU registration roller /L	4024-2672-xx*	1	2,500,000		
		TSL cover assembly	4024-2622-xx*	1	2,500,000		28
6	Periodic check (V) (Every 4,000,000 copies)	Paper feed clutch (Tray 1 to 3)	4024-1028-xx*	3		2,000,000	31,36,41
		Conveyance clutch (Tray 1 to 3)	4024-1028-xx*	3		2,000,000	32,37,42

2. EDH

No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
1	Periodic replacement (I) (Every 500,000 copies)	Feed roller rubber	4594-1009-xx*	1		200,000	92
		Paper feed roller	4594-1010-xx*	1		200,000	93
		Double feed prevention roller rubber	4594-1011-xx*	1		200,000	94
2	Periodic replacement (II) (Every 1,500,000 copies)	Double feed prevention roller	4594-1012-xx*	1		600,000	95

3. FN-6/112

No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
1	Maintenance (Every 250,000 copies)	Paper exit roller A (sponge roller)	4594-2074-xx*	10	250,000		
		Conveyance roller 4 (sponge roller)	4024-2006-xx*	4	250,000		
		Staple cartridge	-	2		5,000/each	
2	Periodic check (I) (Every 1,000,000 copies)	Stapler unit (front)	4594-1001-xx*	1		200,000	70
		Stapler unit (rear)	4594-1001-xx*	1		200,000	71
3	Periodic check (II) (Every 2,500,000 copies)	FNS up/down motor	4594-2206-xx*	1		2,500,000	69

4. C-403/404

No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
1	Periodic check (I) (Every 1,000,000 copies)	Feed roller	4014-3029-xx*	1		500,000	52
		Paper feed conveyance roller	4014-3028-xx*	1		500,000	53
		Double feed prevention roller	4014-3029-xx*	1		500,000	53
2	Periodic check (II) (Every 4,000,000 copies)	Paper feed clutch	4024-1028-xx*	1		2,000,000	54
		Conveyance clutch	4024-1028-xx*	1		2,000,000	55

5. Cover Inserter B

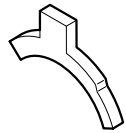
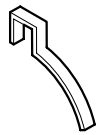
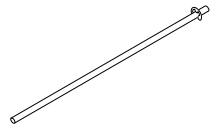
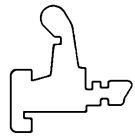
No	Classification	Parts name	Parts No.	Qty	Total count	Actual count	Parts count No.
1	Periodic check (I) (Every 500,000 copies)	Feed roller assembly/B	4014-3153-xx*	2		100,000	79
		Double feed prevention roller assembly	4594-1004-xx*	2		100,000	80
2	Periodic check (II) (Every 1,000,000 copies)	Feed roller assembly/A	4014-3152-xx*	2		200,000	78
3	Periodic check (II) (Every 3,000,000 copies)	Torque limiter (U and L)	4594-1005-xx*	2		600,000	81,86

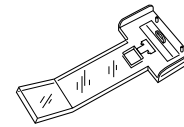
COPY MATERIALS

[1] Single unit supply

Name	Durability/copies
Toner cartridge	40,000
Developer	250,000
Drum	500,000

SERVICE MATERIAL LIST

Tool No.	Tool Name	Appearance	Quantity	Remarks
4024-2152-01	Thermostat PS jig(for upper roller)		1	
4024-2992-01	Thermostat PS jig(for lower roller)		1	
4024-2990-01	Temp. detection jig		1	
4014-5005-01	Optics PS jig		2	
4014-5006-01	Door switch jig		2set	2PCS/set
4014-5007-01	Setting powder	25 g		

Tool No.	Tool Name	Appearance	Quantity	Remarks
4014-5008-01*	PS shaft		2pc/set	For EDH positioning
4014-5010-01*	ADJ chart		1	For EDH adjustment
4014-5011-01*	White chart		1	For EDH adjustment
4014-5009-01	Stapler PS jig		1	For FN-6/ FN-112 adjustment

3 SERVICE

4

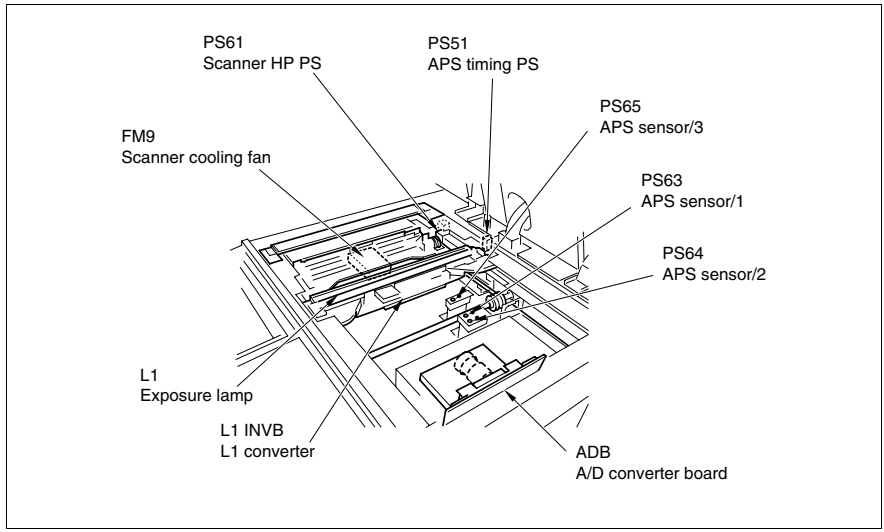
ELECTRIC PARTS LIST

4 ELECTRIC PARTS LIST

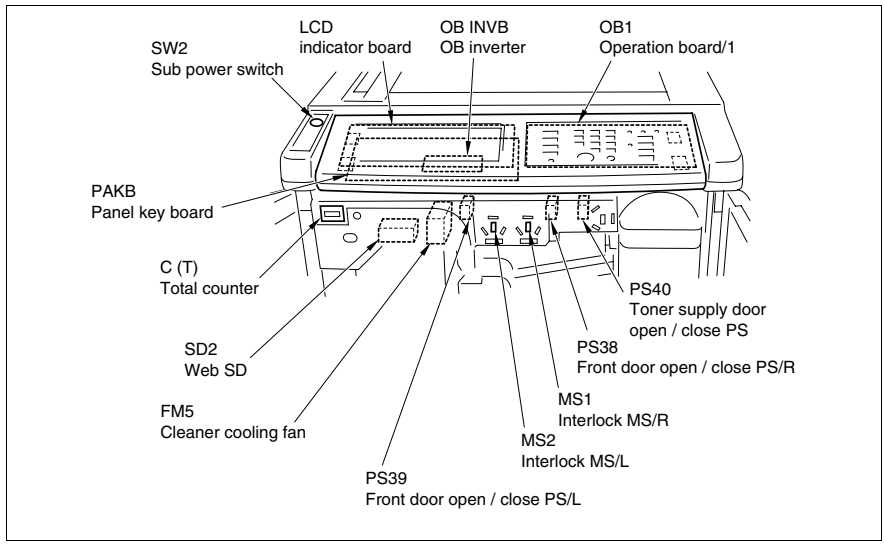
PARTS LAYOUT DRAWING

[1] Parts Layout Drawing

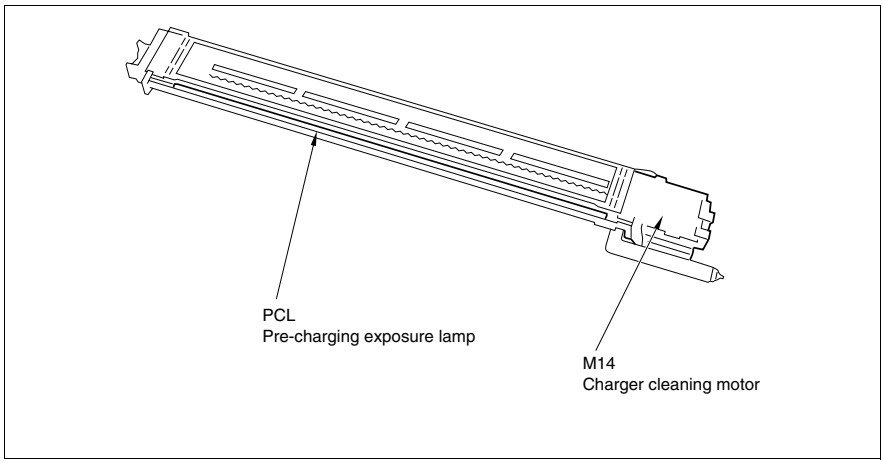
1. Read Section



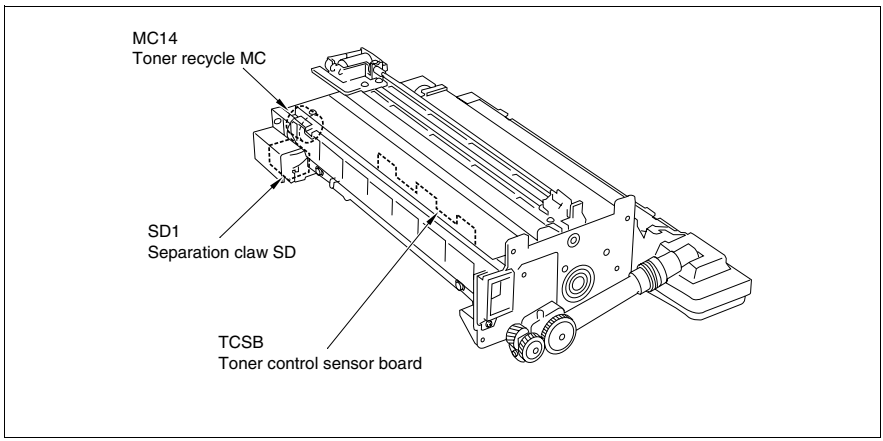
2. Operation Section



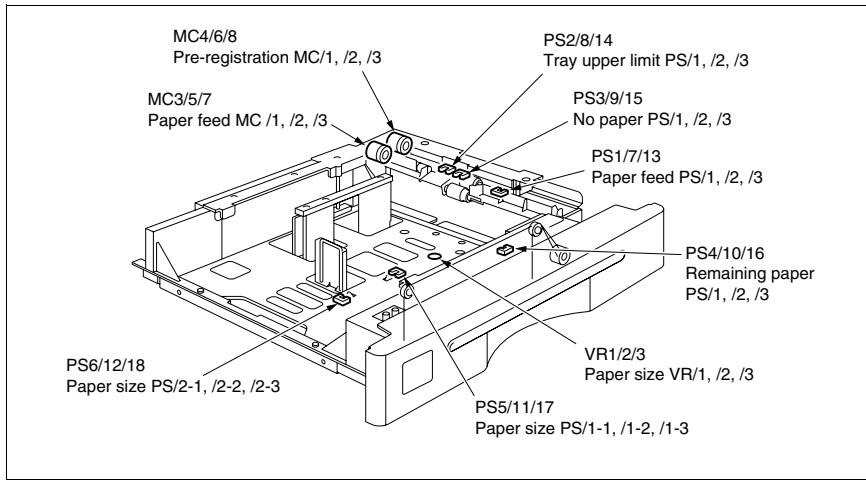
3. Charging corona Section



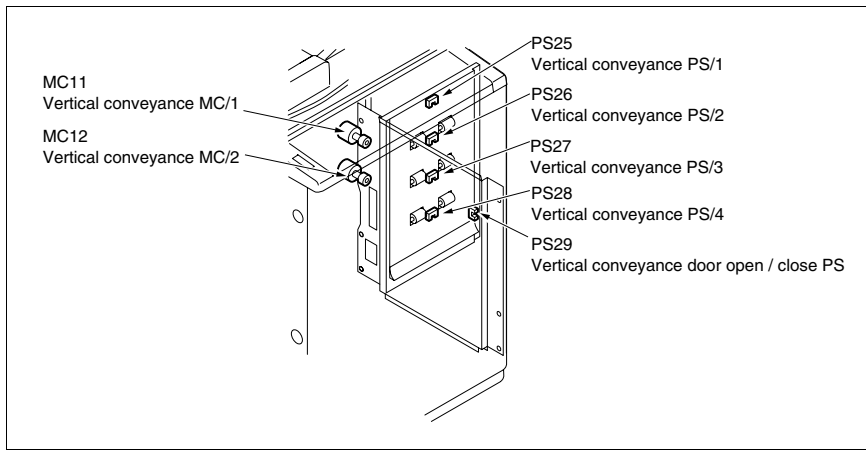
4. Drum Stand Section



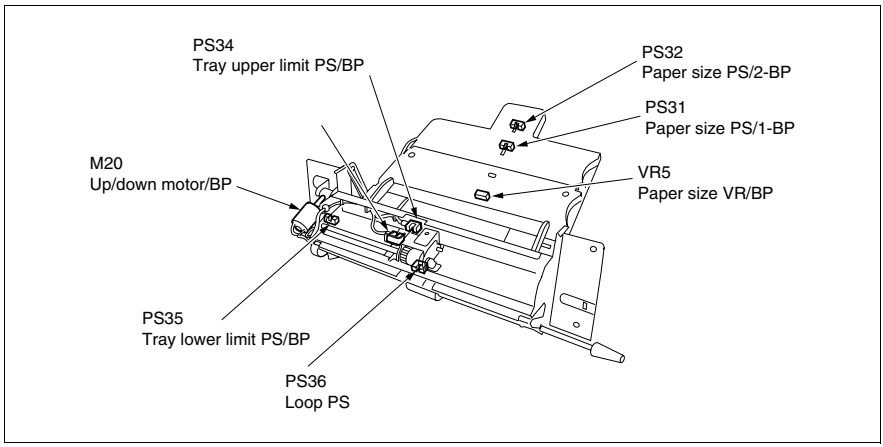
5. Tray 1, 2, 3



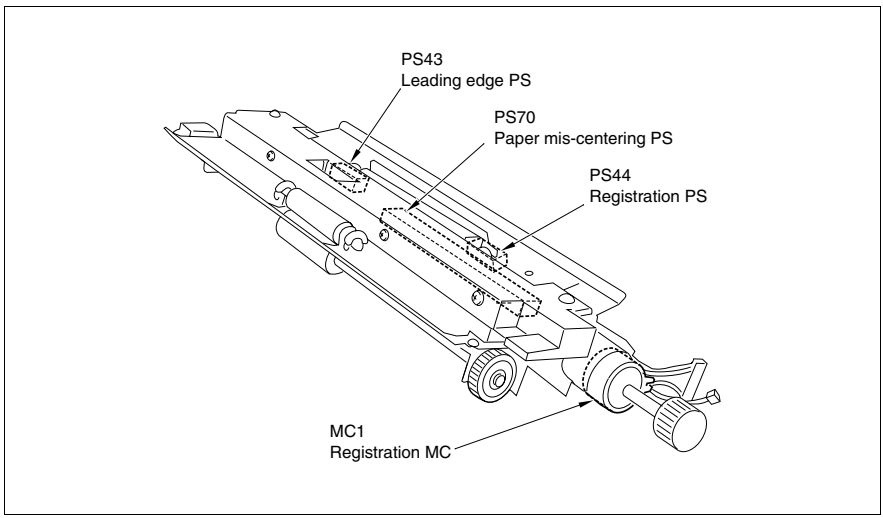
6. Vertical Conveyance Section



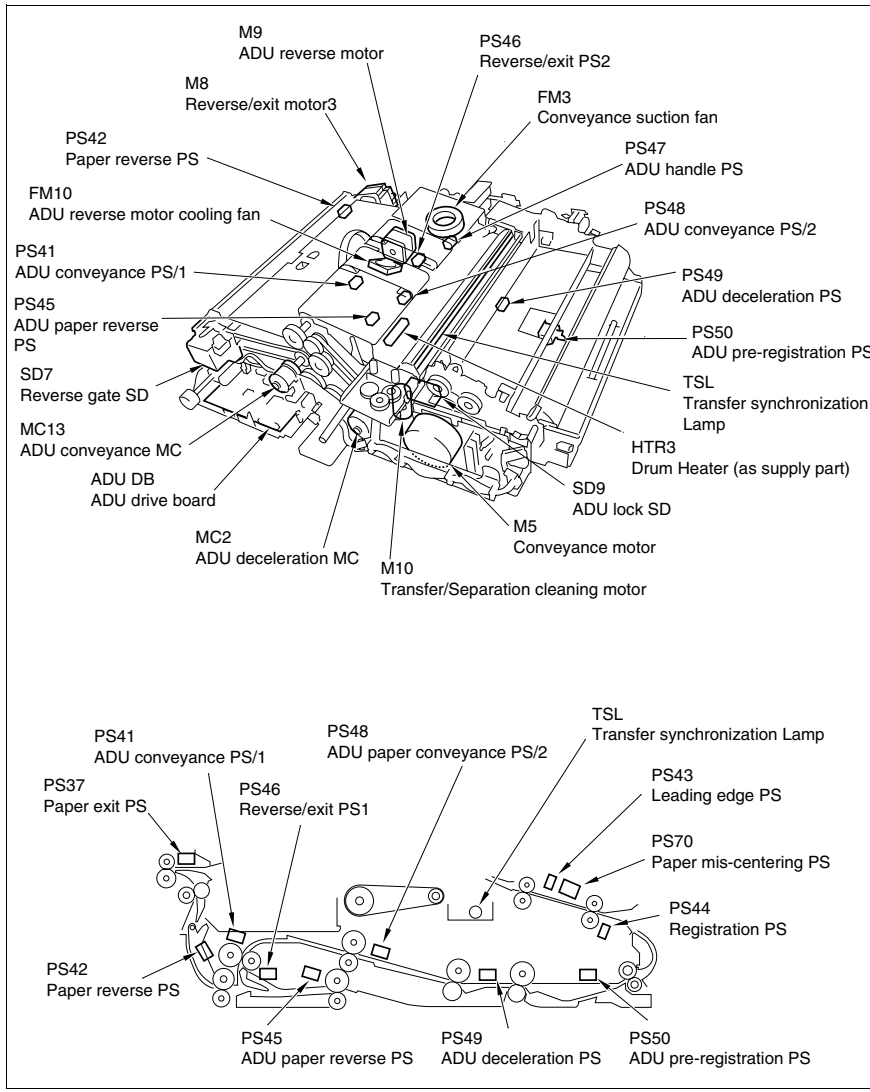
7. By-pass Feed Section



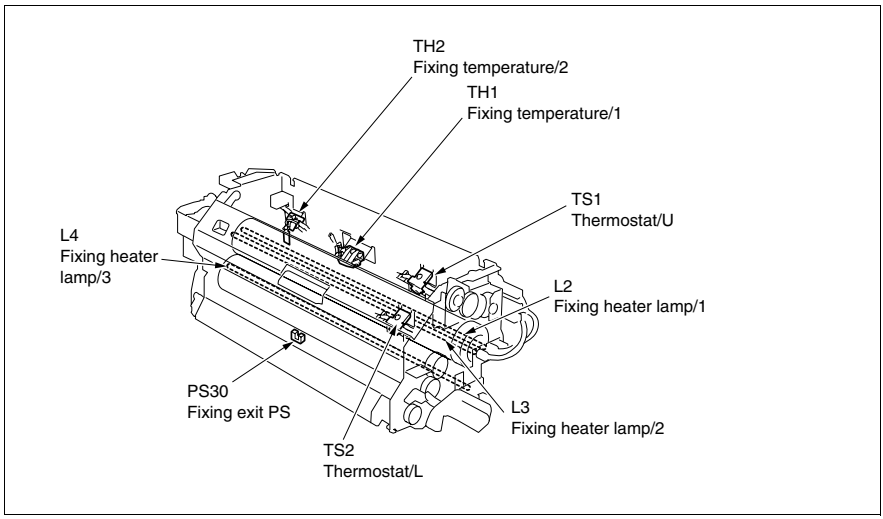
8. Second Paper Feed Section



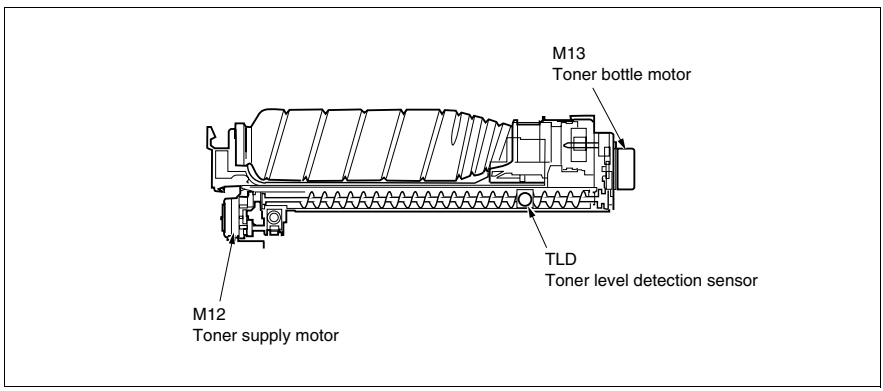
9. ADU Stand Section



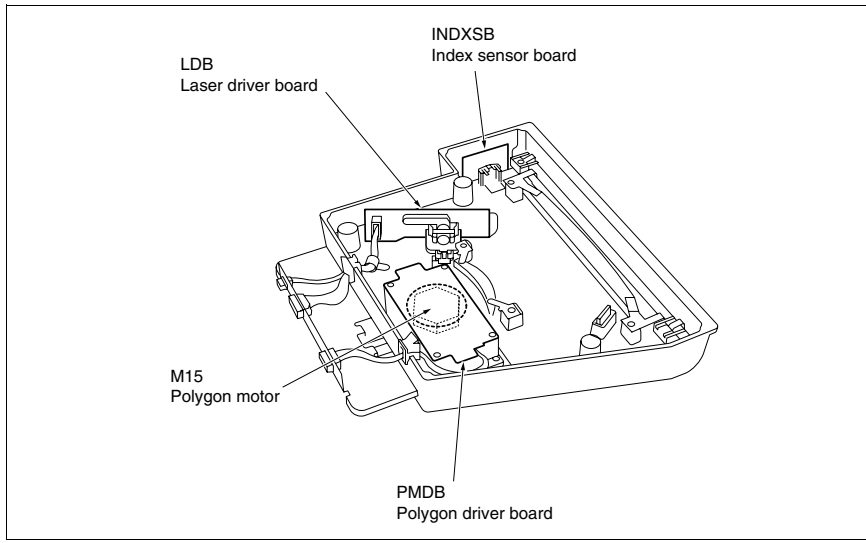
10. Fixing Section



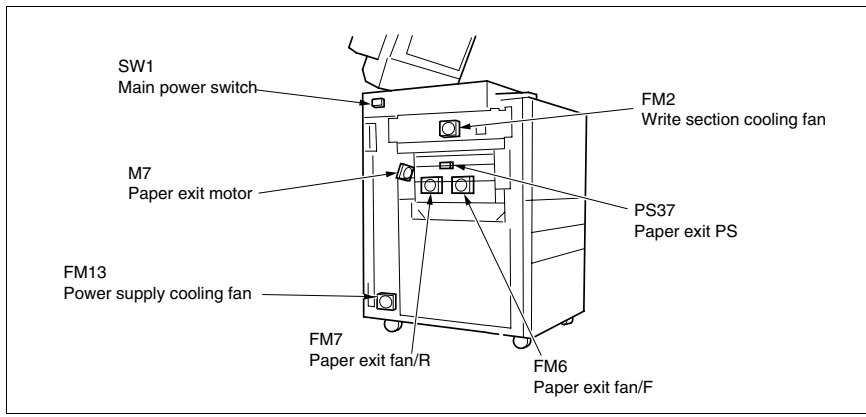
11. Toner Supply Section



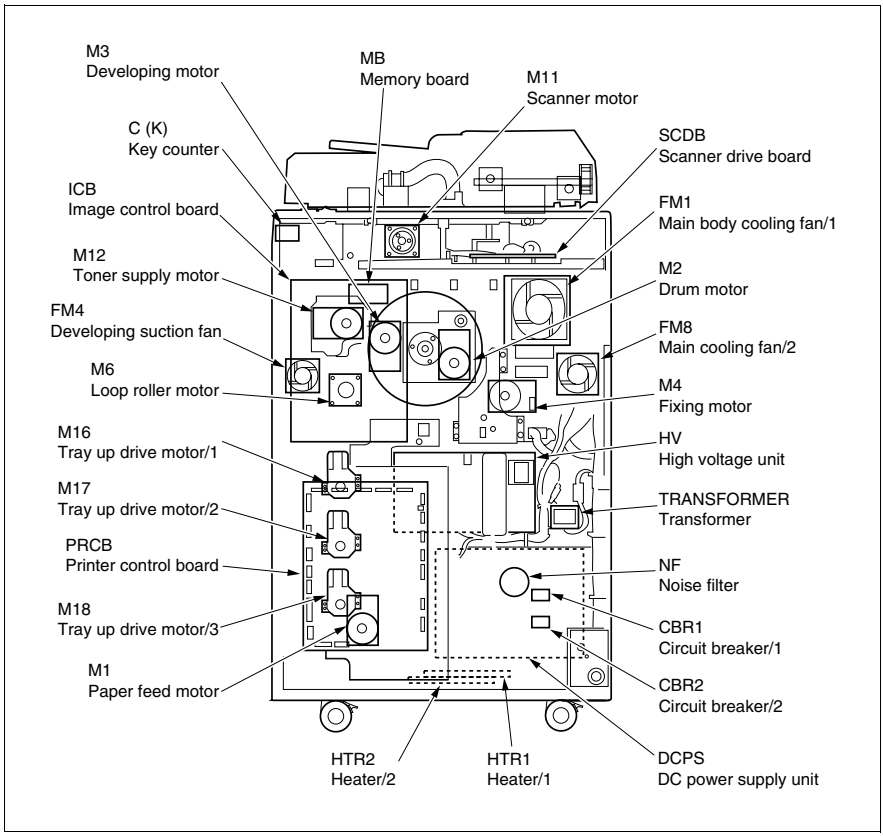
12. Write Section



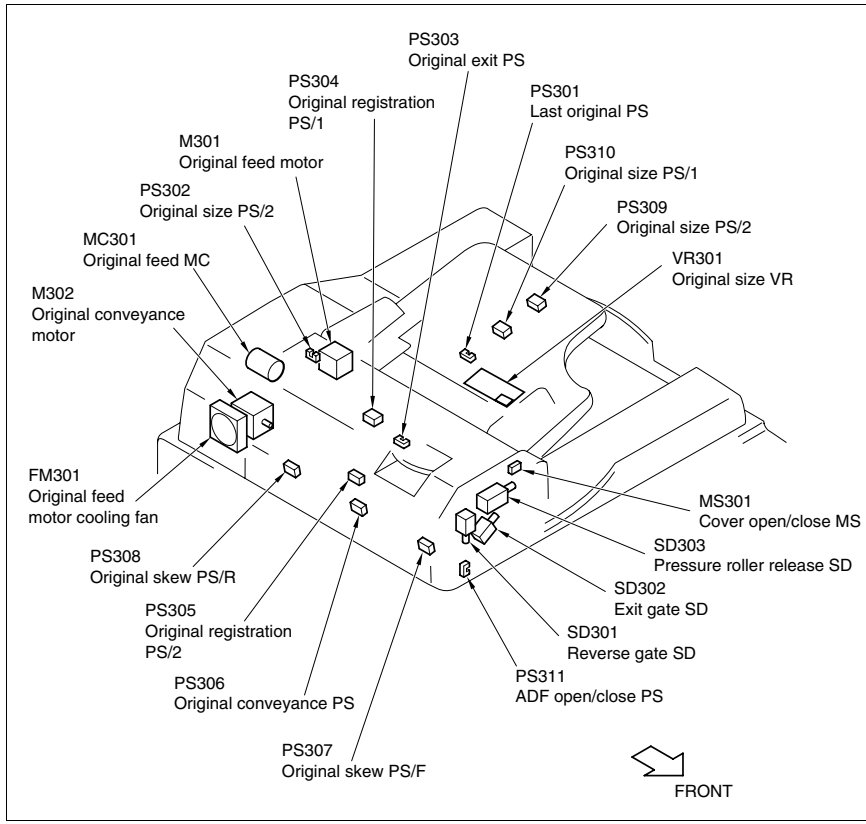
13. Left Side of the Main Body



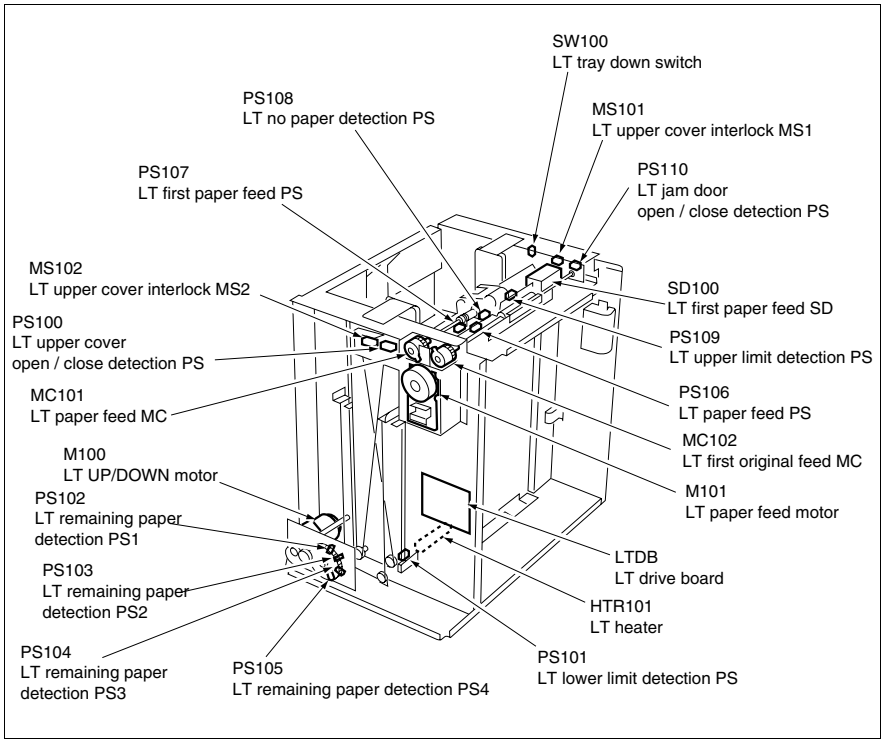
14. Rear Side of the Main Body



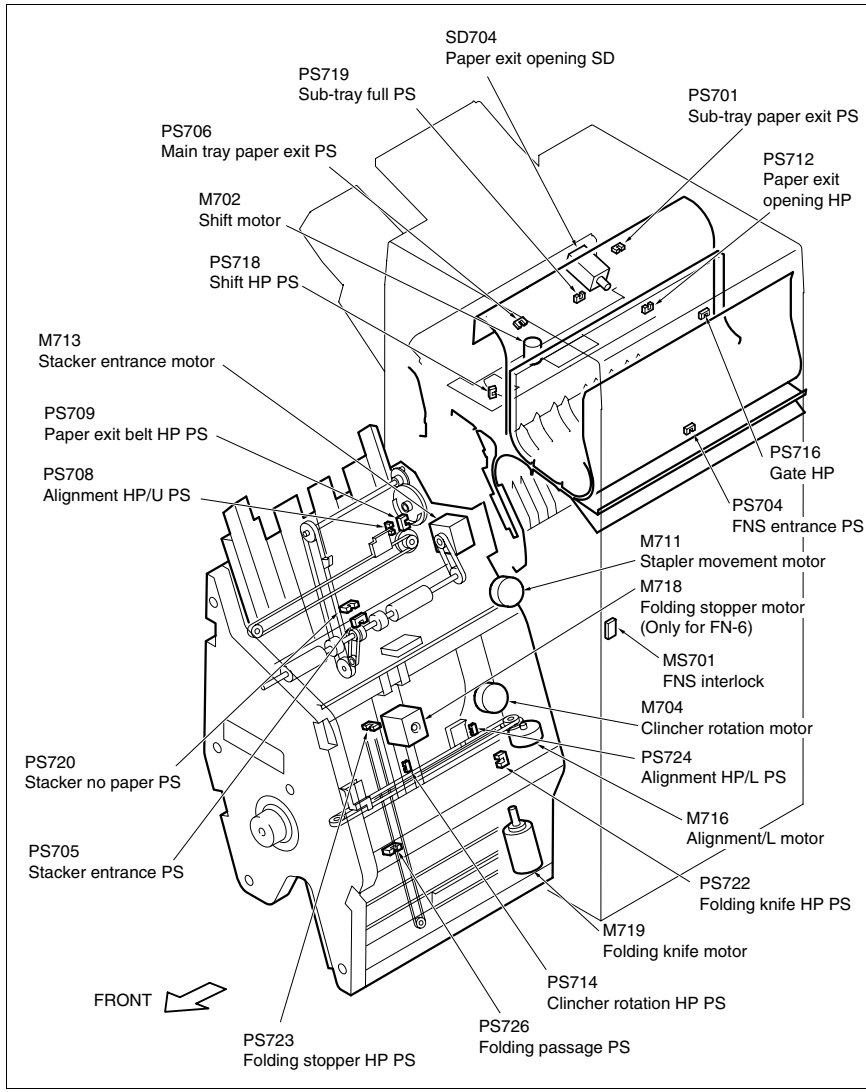
[2] RADF Parts Layout Drawing

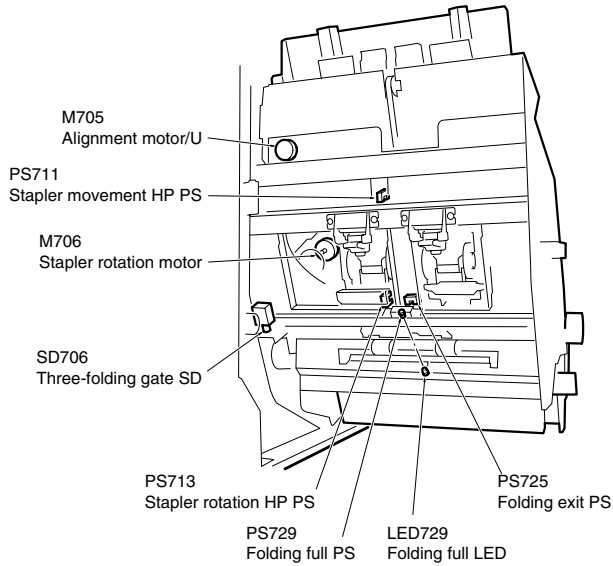


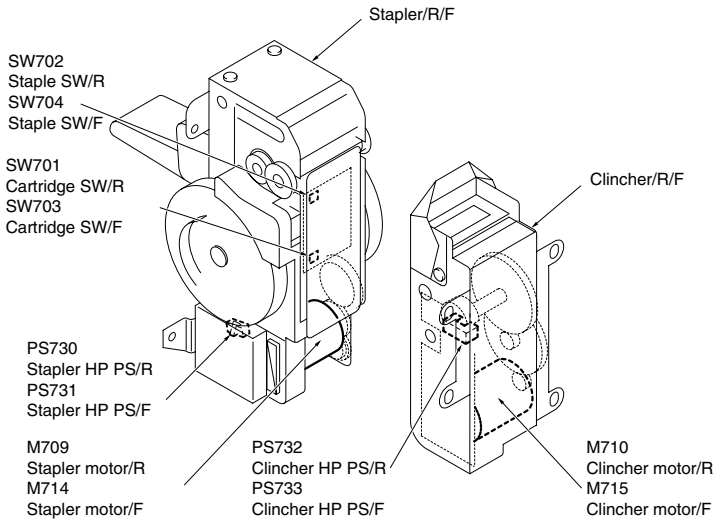
[3] LCT Parts Layout Drawing

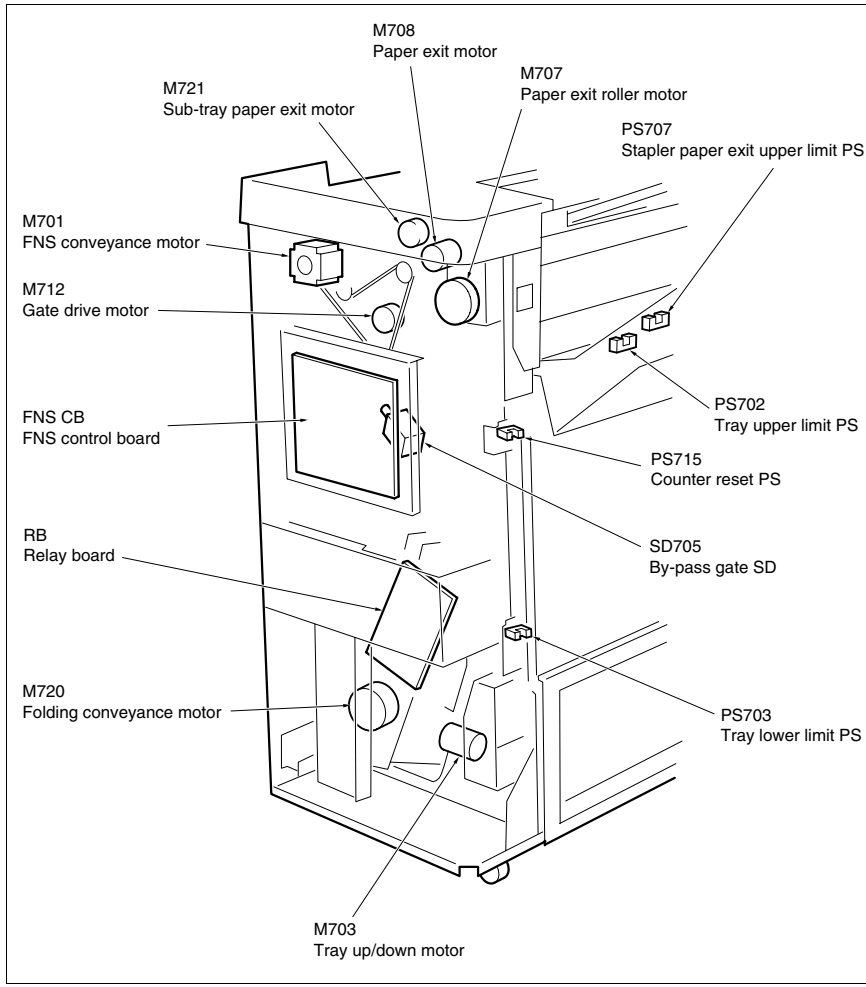


[4] FNS Parts Layout Drawing

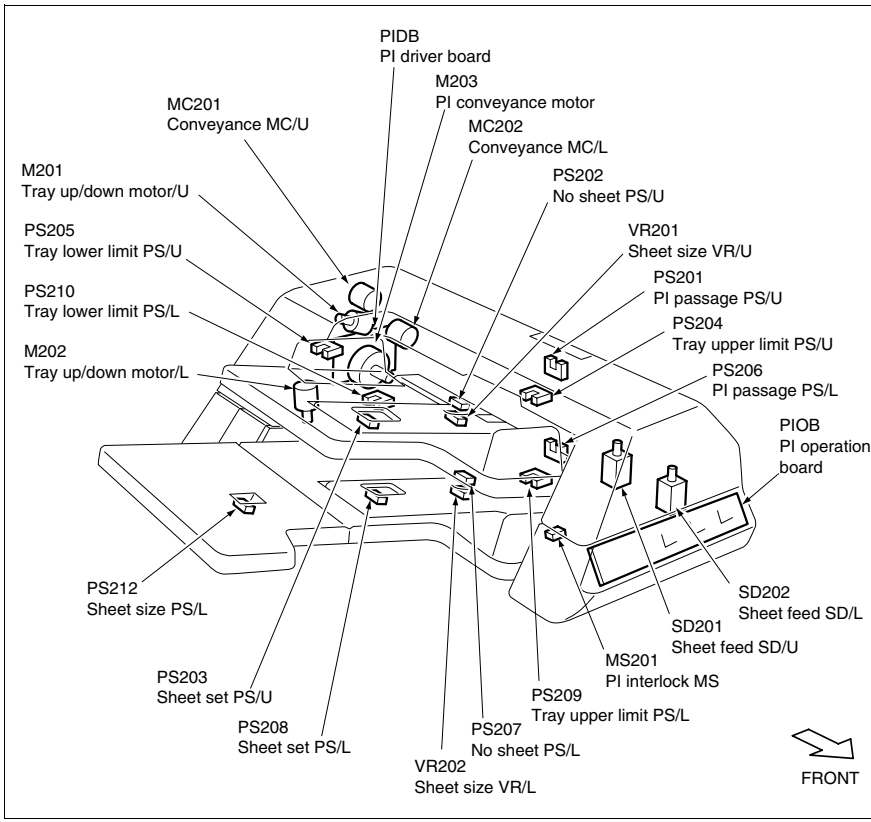



M705
Alignment motor/U
PS711
Stapler movement HP PS
M706
Stapler rotation motor
SD706
Three-folding gate SD
PS713
Stapler rotation HP PS
PS729
Folding full PS
LED729
Folding full LED
PS725
Folding exit PS

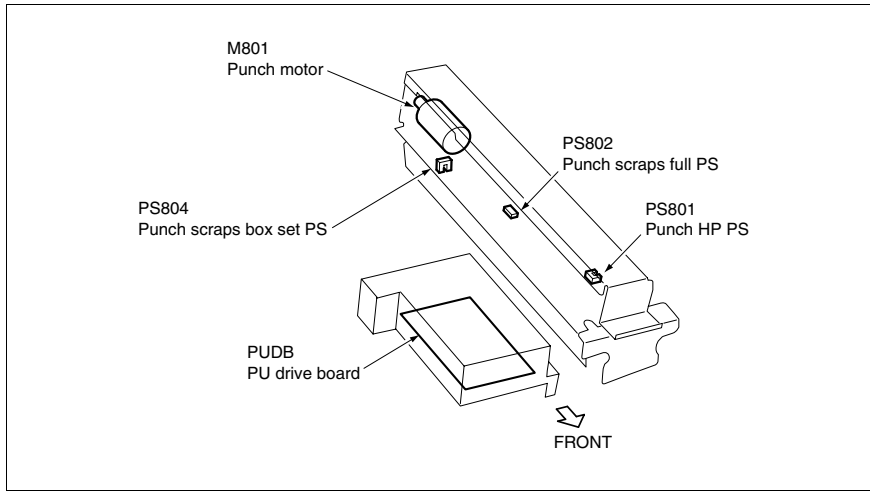

Stapler/R/F
SW702
Staple SW/R
SW704
Staple SW/F
SW701
Cartridge SW/R
SW703
Cartridge SW/F
Clincher/R/F
PS730
Stapler HP PS/R
PS731
Stapler HP PS/F
M709
Stapler motor/R
M714
Stapler motor/F
PS732
Clincher HP PS/R
PS733
Clincher HP PS/F
M710
Clincher motor/R
M715
Clincher motor/F


M708
Paper exit motor
M707
Paper exit roller motor
M721
Sub-tray paper exit motor
PS707
Stapler paper exit upper limit PS
M701
FNS conveyance motor
M712
Gate drive motor
PS702
Tray upper limit PS
FNS CB
FNS control board
PS715
Counter reset PS
SD705
By-pass gate SD
RB
Relay board
M720
Folding conveyance motor
PS703
Tray lower limit PS
M703
Tray up/down motor

[5] PI Parts Layout Drawing



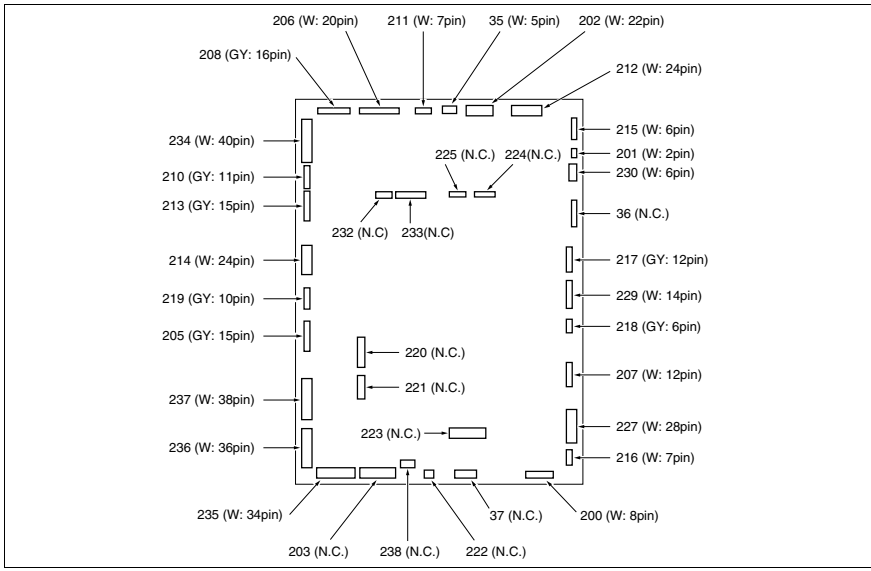
[6] PK Parts Layout Drawing



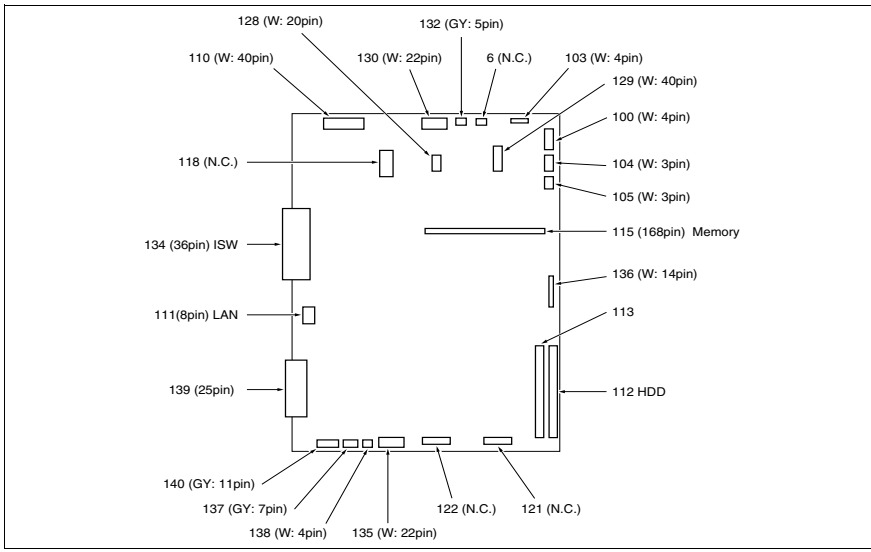
CONNECTOR LAYOUT DRAWING

[1] Connector Layout Drawing

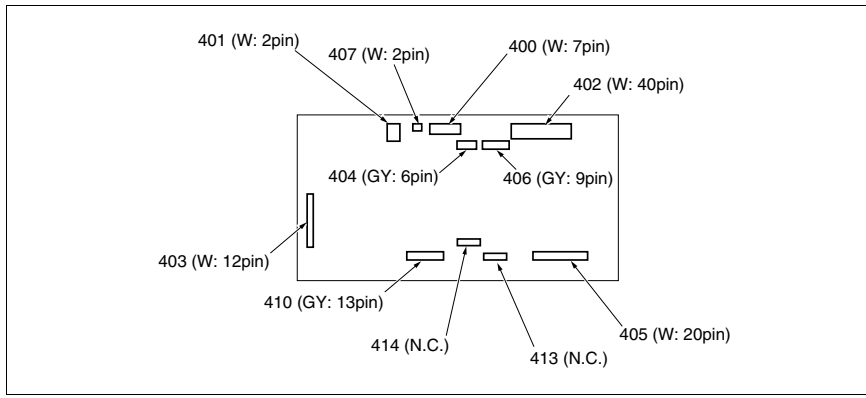
1. Printer control board



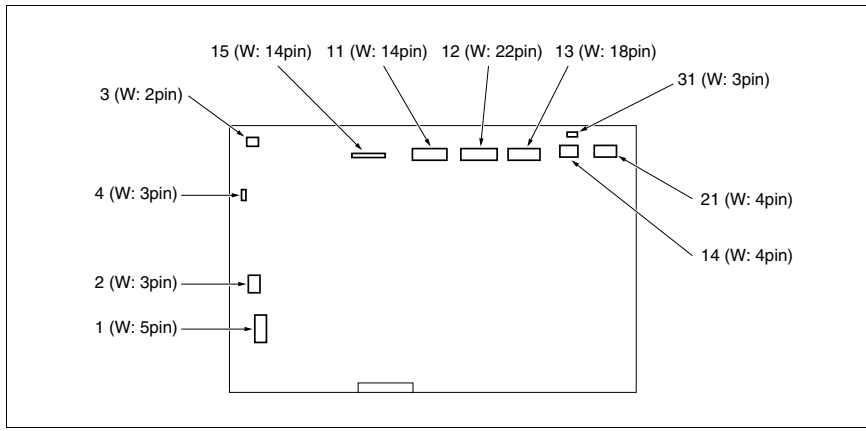
2. Image control board



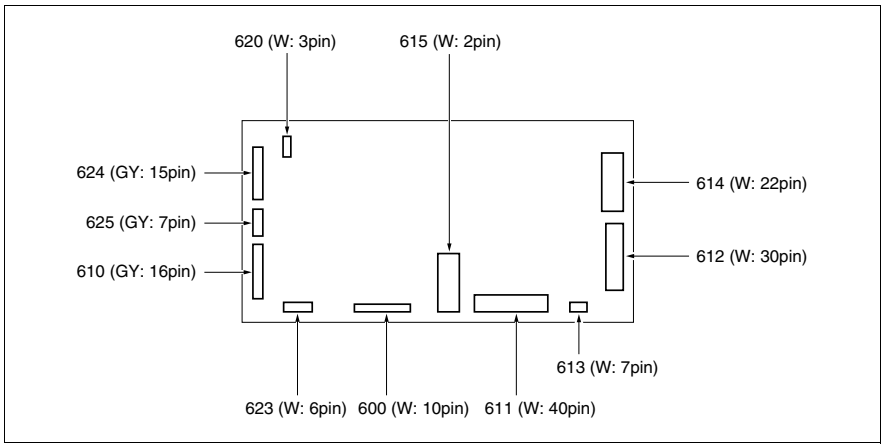
3. ADU drive board



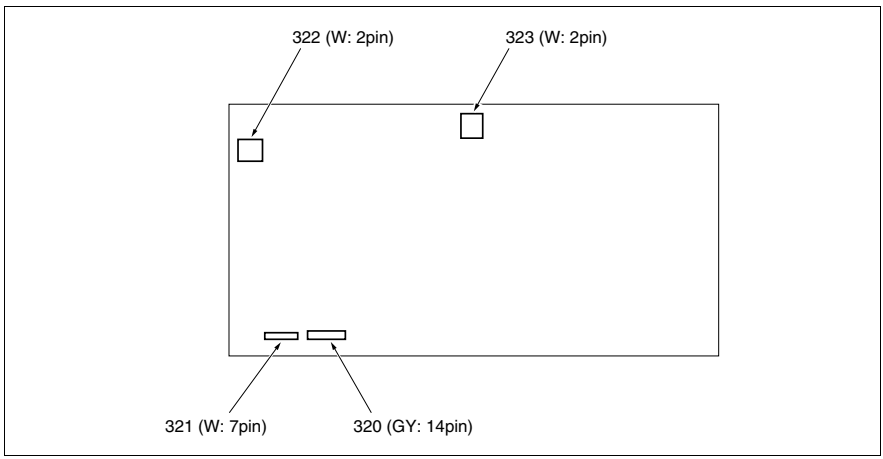
4. DC power supply unit



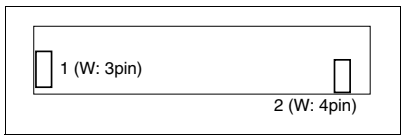
5. Scanner drive board



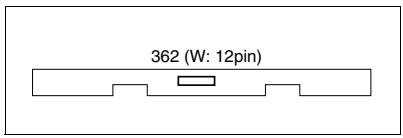
6. High voltage unit



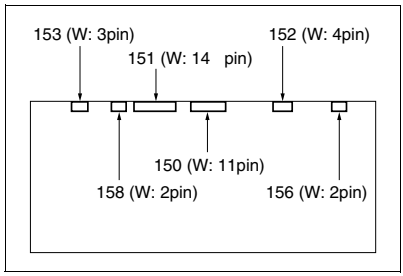
7. L1 inverter



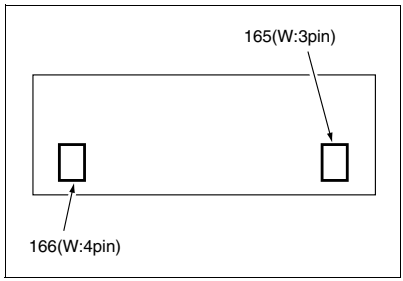
8. Toner control sensor board



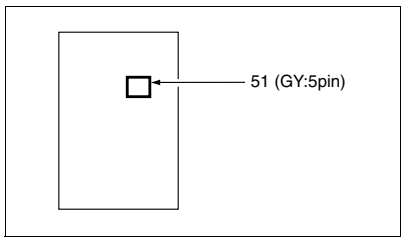
9. Operation board/1



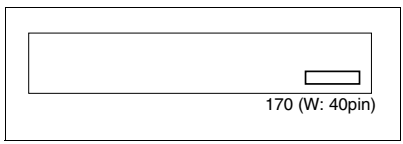
10. OB inverter



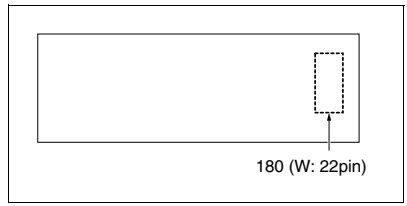
11. Index sensor board



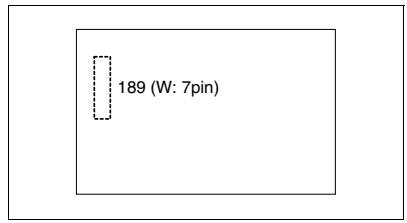
12. A/D converter board



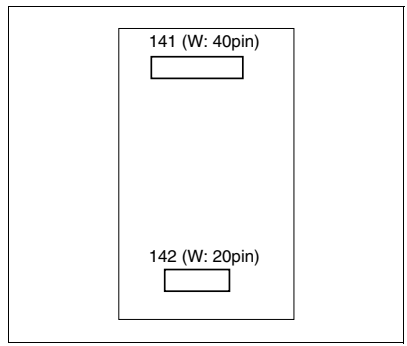
13. Laser driver board



14. Polygon drive board

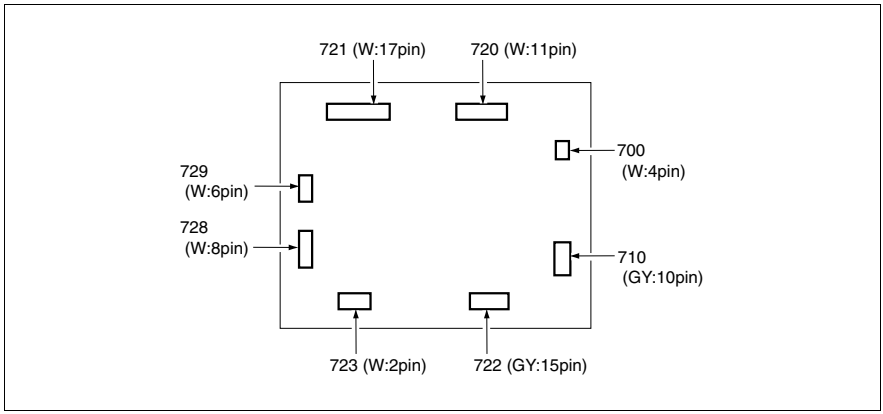


15. Memory board



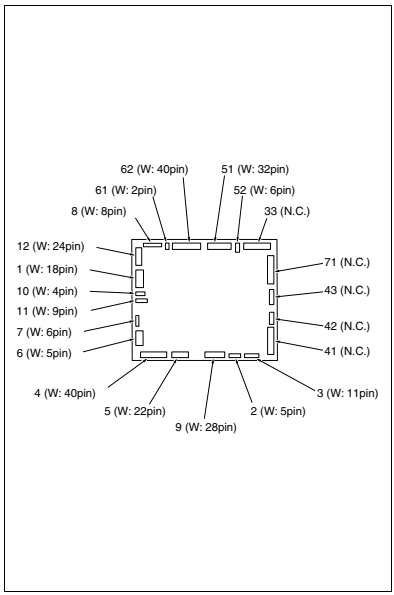
[2] LCT Connector Layout Drawing

1. LT drive board

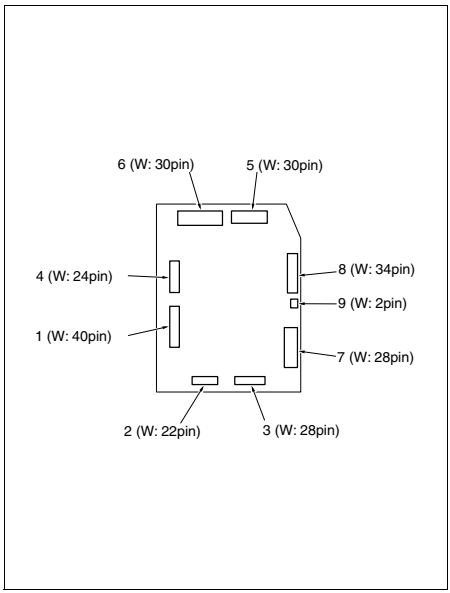


[3] FNS Connector Layout Drawing

1. FNS control board

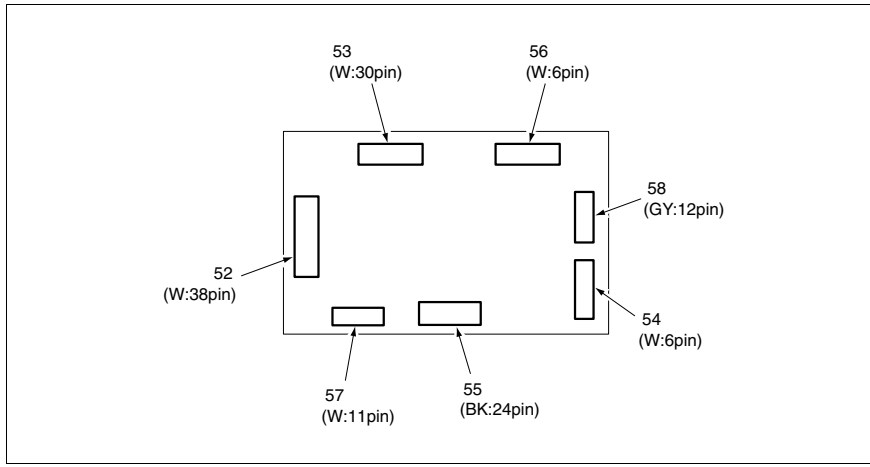


2. Relay board

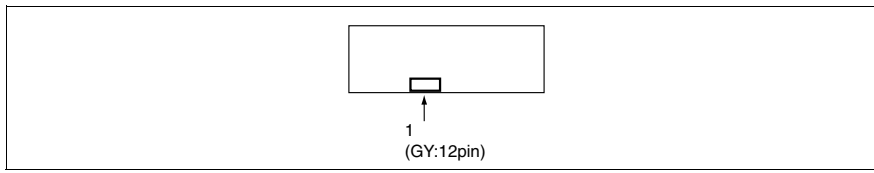


[4] PI Connector Layout Drawing

1. PI drive board

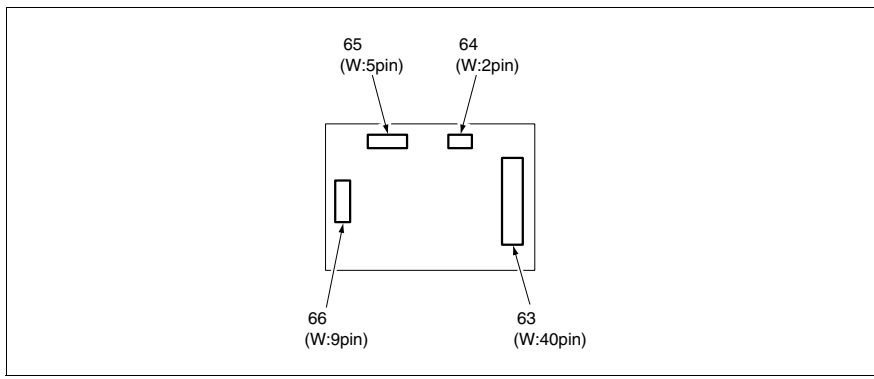


2. PI operation board



[5] PK Connector Layout Drawing

1. Punch drive board



JAM CODE LIST

	Classification	Jam Code		Cause	Machine response	Countermeasure
Main body	By-pass	J10-1	Operating	PS44 (registration) does not turn ON within the predefined time after M6 (loop roller) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed .	Pull the paper out of the by-pass feed tray temporarily and remove the jammed paper.
		J10-2		PS44 (registration) has turnned ON when by-pass feed starts.		
	Tray 1	J11-1		PS1 (paper feed /1) does not turn ON within the predefined time after MC3 (paper feed MC/1) has turned ON.		Open the vertical conveyance door on the main body and remove the jammed paper. Pull out the tray and remove the jammed paper.
		J11-2		PS1 (paper feed /1) is ON and PS36 (loop) is OFF for the predefined time after MC4 (pre-registration MC/1) has turned ON.		
		J11-3	Stationary	PS25 (vertical conveyance /1) is turned ON while in the idling status.	-	Open the vertical conveyance door on the main body and remove the jammed paper.
		J11-5		PS1 (paper feed /1) is turned ON while in the idling status.		Pull out the tray and remove the jammed paper.
	Tray 2	J12-1	Operating	PS7 (paper feed /2) does not turn ON within the predefined time after MC5 (paper feed MC/2) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed .	Open the vertical conveyance door on the main body and remove the jammed paper.
		J12-2		PS7 (paper feed /2) is ON and PS26 (vertical conveyance /2) is OFF for the predefined time after MC6 (pre-registration MC/2) has turned ON.		Pull out the tray and remove the jammed paper.
		J12-3	Stationary	PS26 (vertical conveyance /2) is turned ON while in the idling status.	-	Open the vertical conveyance door on the main body and remove the jammed paper.
		J12-5		PS7 (paper feed /2) is turned ON while in the idling status.		Pull out the tray and remove the jammed paper.

	Classification	Jam Code		Cause	Machine response	Countermeasure
Main body	Tray 3	J13-1	Operating	PS13 (paper feed 3) does not turn ON within the predefined time after MC7 (paper feed MC/3) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed.	Open the vertical conveyance door on the main unit and remove the jammed paper. Pull out the tray and remove the jammed paper.
		J13-2		PS13 (paper feed /3) does not turn OFF, within the predefined time after MC8 (pre-registration MC/3) has turned ON.		
		J13-3	Stationary	PS27 (vertical conveyance /3) is turned ON while in the idling status.	-	Open the vertical conveyance door on the main body and remove the jammed paper.
		J13-5		PS13 (paper feed PS/3) is turned ON while in the idling status.		Pull out the tray and remove the jammed paper.
LCT	LCT	J15-1	Operating	PS107 (LT first paper feed) does not turn ON within the predefined time after MC102 (LT first paper feed MC) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed.	Open the upper cover of the LCT and remove the jammed paper. Open the LCT jam access door and remove the jammed paper.
		J15-2		PS106 (LT paper feed) does not turn ON within the predefined time after MC101 (LT paper feed MC) has turned ON.		
		J15-3	Stationary	PS106 (LT paper feed) is turned ON while in the idling status.	-	
		J15-4		PS107 (LT first paper feed) is turned ON while in the idling status.		
Main body	Paper conveyance (all trays)	J17-1	Operating	PS44 (registration) does not turn ON within the predefined time after PS36 (loop) or PS50 (ADU pre-registration) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed.	Open the front door and pull out the ADU stand. Then, open the registration loop jam processing section and ADU exit guide plate, and remove the jammed paper.
	Paper conveyance (tray 1)	J17-2		PS36 (loop) does not turn ON within the predefined time after PS1 (paper feed PS/1) has turned ON.		

	Classification	Jam Code		Cause	Machine response	Countermeasure
Main body	Paper conveyance (tray 2/3)	J17-3	Operating	PS36 (loop) does not turn ON within the predefined time after PS26 (vertical conveyance /2) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed.	Open the vertical conveyance door on the main body and remove the jammed paper.
	Paper conveyance (tray 2)	J17-4		PS26 (vertical conveyance /2) does not turn ON within the predefined time after PS7 (paper feed /2) has turned ON.		
	Paper conveyance (tray 3)	J17-5		PS26 (vertical conveyance /2) does not turn ON within the predefined time after MC8 (pre-registration MC/3) has turned ON.		
LCT	LCT	J17-8		PS36 (loop) does not turn ON within the predefined time after PS106 (LT paper feed) has turned ON.		Open the LT jam door and remove the jammed paper.
Main body	Paper feed/ conveyance	J17-9	Stationary	PS43 (leading edge) is turned ON while in the idling status.	-	Open the vertical conveyance door and/or the front door on the main body and remove the jammed paper.
		J17-10		PS44 (registration) is turned ON while in the idling status.		
		J17-12		PS36 (loop) is turned ON while in the idling status.		
Main body	Vertical conveyance door	J19-1	Operating	The vertical conveyance door is opened while copying.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed	Open the vertical conveyance door on the main body and remove the jammed paper.
LCT	LCT	J19-2		The jam access door or the top cover is opened while copying.		Open the LT jam access door or the top cover and remove the jammed paper.
Main body	Drum	J21-1		Dmax has detected a paper while the print sequence is in motion.		Open the front door and pull out the ADU stand and remove the jammed paper.
		J21-2	Stationary	Dmax sensor has detected a paper while in the idling status.	-	

	Classification	Jam Code		Cause	Machine response	Countermeasure
Main body	Second paper feed conveyance	J31-1	Operating	PS43 (leading edge) does not turn ON within the predefined time after MC1 (registration MC) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed	Open the front door and pull out the ADU stand and remove the jammed paper.
		J31-2		PS30 (fixing exit) does not turn ON within the predefined time after PS43 (leading edge) has turned ON.		
	Fixing/paper exit	J32-1		PS37 (paper exit) does not turn ON within the predefined time after PS30 (fixing exit) has turned ON.		
		J32-2		PS42 (paper reverse) does not turn ON within the predefined time after PS30 (fixing exit) has turned ON.		
		J32-3		PS42 (paper reverse) does not turn OFF within the predefined time after PS42 has turned ON.		
	Fixing/paper exit	J32-4	Operating	PS37 (paper exit) does not turn ON within the predefined time after PS42 (paper reverse) has turned OFF.		
		J32-5		PS37 (paper exit) does not turn OFF within the predefined time after PS37 has turned ON.		
		J32-6	Stationary	PS37 (paper exit) is turned ON while in the idling status.	-	
		J32-8		PS42 (paper reverse) is turned ON while in the idling status.		
		J32-9		PS30 (fixing exit) is turned ON while in the idling status.		
		J32-10		PS46 (reversal/exit) is turned ON while in the idling status.		
	Front door	J51-1	Operating	Front door on the right or on the left is opened while a job is being processed.	The machine stops immediately.	
RADF	RADF	J61-1	Operating	Open/close cover was opened while RADF is in motion.	RADF stops immediately. The machine stops after paper ejection if copying/copied paper is present.	Open the open/close cover and the paper feed unit to remove the jammed paper.
		J61-2		RADF was opened while RADF is in motion.		
		J62-1		PS304 (original registration /1) does not turn OFF within the predefined time after feeding of the single-side original has started.		

	Classification	Jam Code		Cause	Machine response	Countermeasure
RADF	RADF	J62-2	Operating	PS304 (original registration /1) does not turn OFF within the predefined time after feeding of the double-side original has started.	RADF stops immediately. The machine stops after paper ejection if copying/copied paper is present.	Open the open/close cover and the paper feed unit to remove the jammed paper.
		J62-3		PS305 (original registration /2) does not turn ON within the predefined time after feeding of the single-side original has started.		
		J62-4		PS305 (original registration /2) does not turn ON within the predefined time since reverse paper feed of the back side of the double-side copy has started.		
		J62-5		PS305 (original registration /2) does not turn ON within the predefined time since reverse paper feed of the front side of the double-side copy has started.		
		J62-6		PS305 (original registration /2) does not turn OFF within the predefined time since it has turned ON when feeding the paper for the single-side copy.		
		J62-7		PS305 (original registration /2) does not turn OFF within the predefined time since it has turned ON when processing the reverse paper feed for copying the back side of the double-side original.		
		J62-8		PS305 (original registration /2) does not turn OFF within the predefined time since it has turned ON when processing the reverse paper feed for copying the front side of the double-side original.		
		J62-9		PS306 (original conveyance) does not turn ON within the predefined time after re-feeding of the single-side original has started.		
		J62-10		PS306 (original conveyance) does not turn ON within the predefined time since reverse paper feed of the double-side copy has started.		

	Classification	Jam Code		Cause	Machine response	Countermeasure
RADF	RADF	J63-1	Operating	PS306 (original conveyance) does not turn OFF within the predefined time since it has turned ON when feeding the paper for the single-side copy.	RADF stops immediately. The machine stops after paper ejection if copying/copied paper is present.	Open the open/close cover and the paper feed unit to remove the jammed paper.
		J63-2		PS306 (original conveyance) does not turn OFF within the predefined time since it has turned ON when processing the reverse paper feed for copying the back side of the double-side original.		
		J63-3		PS306 (original conveyance) does not turn OFF within the predefined time since it has turned ON when processing the reverse paper feed for copying the front side of the double-side original.		
		J63-4		PS303 (original exit) does not turn ON within the predefined time after PS306 (original conveyance PS) has turned ON.		
		J63-5		PS303 (original exit PS) does not turn OFF within the predefined time since it has turned ON.		
		J65-1	Stationary	PS304 (original registration) is turned ON while in the idling status.		
		J65-2		PS306 (original conveyance) is turned ON while in the idling status.		
		J65-4		PS303 (original exit) is turned ON while in the idling status.		
		J65-8		PS305 (original registration /2) is turned ON while in the idling status.		
		J65-10		PS307 (original skew /F) is turned ON while in the idling status.		
		J65-20		PS308 (original skew /R) is turned ON while in the idling status.		

	Classification	Jam Code		Cause	Machine response	Countermeasure
FNS	FNS	J71-1		Front door of FNS or the top cover of PI has opened while a job is being processed.	Machine stops immediately.	Remove the jammed paper from the FNS or the main body.
		J72-16		PS704 (FNS entrance) does not turn ON within the predefined time after PS37 (paper exit) has turned ON.		
		J72-17		PS706 (main tray paper exit) does not turn ON within the predefined time after PS704 (FNS entrance) has turned ON.		
		J72-18		PS705 (stacker entrance) does not turn ON within the predefined time after PS704 (FNS entrance) has turned ON. (Staple mode)		
		J72-19		PS705 (stacker rotation) does not turn OFF within the predefined time after M713 (stacker entrance) has turned ON.		
		J72-20	Operating	PS706 (main tray paper exit) does not turn ON within the predefined time after the paper ejection has started. (Staple mode)		
		J72-21		PS706 (main tray paper exit) does not turn OFF within the predefined time since it has turned ON. (Staple mode large-size paper)		
		J72-23		PS701 (sub-tray paper exit) does not turn OFF within the predefined time since it has turned ON. (Sub-tray paper exit mode)		
		J72-24		PS726 (folding passage) does not turn ON within the predefined time since stapling has completed.		
		J72-25		PS725 (folding exit) does not turn ON within the predefined time since M719 (folding knife) has turned ON.		
		J72-26		PS725 (folding exit) does not turn OFF within the predefined time since it has turned ON.		
		J72-27		PS720 (stacker no paper) is turned OFF when stapling starts.		
		J72-28		PS705 (stacker entrance) does not turn OFF within the predefined time since it has turned ON.		

	Classification	Jam Code		Cause	Machine response	Countermeasure
FNS	FNS	J72-29	Operating	PS706 (main tray paper exit) does not turn OFF within the predefined time since it has turned ON. (non-stapling mode)	Machine stops immediately.	Remove the jammed paper from the FNS or the main body.
		J72-30		PS706 (main tray paper exit) does not turn OFF within the predefined time since it has turned ON. (Staple mode small-size paper)		
	PI	J72-35		PS206 (PI passage /L) does not turn ON within the predefined time after MC202 (conveyance MC/L) has turned ON.		
	PK	J72-43		PS801 (punch HP) does not turn ON within the predefined time after M801 (punch) has turned ON.		
	FNS	J72-48		PS726 (folding passage) does not turn OFF within the predefined time since it has turned ON.		
	PI	J72-49		PS201 (PI passage /U) does not turn ON within the predefined time after MC201 (conveyance MC/U) has turned ON.		Open the top cover of PI and remove the jammed paper.
		J72-50		PS704 (FNS entrance) does not turn ON within the predefined time after PS201 (PI passage /U) has turned ON.		
		J72-51		PS704 (FNS entrance) does not turn ON within the predefined time after PS206 (PI passage /L) has turned ON.		
	FNS	J72-81		PS730 (stapler HP /R) and PS732 (clincher HP /R) do not turn ON within the predefined time after M709 (stapler /R) and M710 (clincher /R) have turned ON.		Remove the jammed paper from the FNS or the main body.
		J72-82		PS731 (stapler HP /F) and PS733 (clincher HP /F) do not turn ON within the predefined time after M714 (stapler /F) and M715 (clincher /F) have turned ON.		
		J72-83		PS730/731 (stapler HP /R, /F) and PS732/733 (clincher HP /R, /F) do not turn ON within the predefined time after M709/714 (stapler/R, /F) and M710/715 (clincher /R, /F) have turned ON.		

	Classification	Jam Code	Cause			Machine response	Countermeasure
FNS	FNS	J72-90	Operating	FNS does not stop within the predefined time since the stop signal has been transmitted to FNS from the main unit.		Machine stops immediately.	Remove the jammed paper from the FNS or the main body.
		J73-1	Stationary	PS706 (main tray paper exit) is turned ON while in the idling status.		-	
		J73-2		PS705 (stacker entrance) is turned ON while in the idling status.			
		J73-5		PS704 (FNS entrance) is turned ON while in the idling status.			
		J73-7		PS701 (sub-tray paper exit) is turned ON while in the idling status.			
		J73-8		PS720 (stacker no paper) is turned ON when paper jam has occurred during paper ejection.			
		J73-9		PS726 (folding passage) is turned ON while in the idling status.			
		J73-10		PS725 (folding exit) is turned ON while in the idling status.			
	PI	J73-14		PS206 (PI passage /L) is turned ON while in the idling status.			
		J73-17		PS201 (PI passage /U) is turned ON while in the idling status.			
Main body	ADU	J92-1	Operating	PS46 (reverse/exit) does not turn ON within the predefined time after PS42 (paper reverse) has turned ON.		The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed	Open the front door and pull out the ADU unit and remove the jammed paper.
		J92-3	Stationary	PS45 (ADU paper reverse) is turned ON while in the idling status.		-	
		J93-1	Operating	PS48 (ADU conveyance /2) does not turn ON within the predefined time after PS46 (reverse /exit) has turned OFF.		The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed	
		J93-2	Stationary	PS48 (ADU conveyance /2) is turned ON while in the idling status.		-	
		J93-3		PS50 (ADU pre-registration) is turned ON while in the idling status.			

	Classification	Jam Code		Cause	Machine response	Countermeasure
Main body	ADU	J94-1	Operating	PS49 (ADU deceleration) does not turn ON within the predefined time after PS48 (ADU conveyance /2) has turned ON.	The machine stops immediately after paper ejection has completed when jamming occurs while a job is being processed	Open the front door and pull out the ADU stand and remove the jammed paper.
		J94-2		PS50 (ADU pre-registration) does not turn ON within the predefined time after PS49 (ADU deceleration) has turned ON again.		
		J94-3	Stationary	PS49 (ADU deceleration) is turned ON while in the idling status.	-	

ERROR CODE LIST

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Drive	F13-01	Error detection signal is detected continuously for one second when two seconds have passed since M1 (paper feed) has turned ON.	The machine stops immediately and turns OFF RL1 (main).	M1 (paper feed) PRCB (printer control board)
		F13-02	Error detection signal is detected continuously for one second when two seconds have passed since M101 (LT paper feed) has turned ON.		M101 (LT paper feed) LTDB (LT drive board)
	Tray 1	F18-10	Error detection signal for M16 (tray up drive /1) is detected while M16 is turned ON.		M16 (tray up drive /1) PRCB (printer control board) PS2 (tray upper limit/1)
		F18-11	PS2 (tray upper limit/1) does not turn ON within 20 seconds since the lifting motion triggered by activating M16 (tray up drive /1) has started while PS2 is turned OFF.		
	Tray 2	F18-20	Error detection signal for M17 (tray up drive /2) is detected while M17 is turned ON.		M17 (tray up drive /2) PRCB (printer control board) PS8 (tray upper limit/2)
		F18-21	PS8 (tray upper limit/2) does not turn ON within 20 seconds since the lifting motion triggered by activating M17 (tray up drive /2) has started while PS8 is turned OFF.		
	Tray 3	F18-30	Error detection signal for M18 (tray up drive /3) is detected while M18 is turned ON.		M18 (tray up drive /3) PRCB (printer control board) PS14 (tray upper limit/3)
		F18-31	PS14 (tray upper limit/3) does not turn ON within 20 seconds since the lifting motion triggered by activating M18 (tray up drive /3) has started while PS14 is turned OFF.		
LCT	LCT	F18-50	Error detection signal for M100 (LT up/down) is detected continuously for one second while M100 is turned ON.	The machine stops immediately and turns OFF RL1 (Main).	M100 (LT up/down) LTDB (LT drive board) PS101 (LT lower limit detection) PS109 (LT upper limit detection)
		F18-51	PS109 (LT upper limit detection) or PS101 (LT lower limit detection) does not turn ON within 35 seconds since the lifting or descent motion triggered by activating M100 (LT up/down) has started while PS109 or PS101 is turned OFF.		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main boby	By-pass feed	F18-60	PS34 (tray upper limit/BP) or PS35 (tray lower limit/BP) does not turn ON within 10 seconds since the upward or downward motion triggered by activating M20 (up/down/BP) has started while PS34 or PS35 is turned OFF.	No error code is displayed on the operation panel. The code is registered in data collection.	M20 (up/down/BP) PRCB (printer control board) PS34 (tray upper limit/BP) PS35 (tray lower limit/BP)
	Wire cleaning abnormality	F21-01	The lock signal for M14 (charger cleaning) is not detected when more than 25 seconds have passed since the return motion (back to front) of M14 has started.	The machine stops immediately and turns OFF RL1 (main).	M14 (charger cleaning) PRCB (printer control board)
		F21-02	The lock signal for M14 (charger cleaning) is detected within 2 seconds since the return motion (back to front) of M14 has started.		M14 (charger cleaning) PRCB (printer control board)
		F21-03	The lock signal for M14 (charger cleaning) is not detected when more than 25 seconds have passed since the return motion (back to front) of M14 has started while re-try process is in motion after lock detection.		
		F21-05	The lock signal for M10(transfer/separation cleaning) is not detected when more than 25 seconds have passed since the return motion (back to front) of M10 has started.		M10 (transfer/separation cleaning) ADUDB (ADU drive board) PRCB (printer control board)
		F21-06	The lock signal for M10 (transfer/separation cleaning) is detected within 2 seconds since the return motion (back to front) of M10 has started.		
		F21-07	The lock signal for M10 (transfer/separation cleaning) is not detected when more than 25 seconds have passed since the return motion (back to front) of M10 has started while re-try process is in motion after lock detection.		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Fan abnormality	F22-01	An error for SFAN_EM signal is detected when 2 seconds have passed since FM4 (developing suction) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.	The machine stops immediately and turns OFF RL1 (main).	FM4 (developing suction) PRCB (printer control board)
		F22-02	An error for CLEAN_EM signal is detected when 2 seconds have passed since FM5 (cleaner cooling) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.		FM5 (cleaner cooling) ADUDB (ADU drive board) PRCB (printer control board)
	Motor abnormarity	F23-01	An error for TONERM_EM signal is detected when 7 seconds have passed since M13 (toner bottle) has turned ON.		M13 (toner bottle) PRCB (printer control board)
		F23-02	An error for DEVM_EM signal is detected when more than 1 second has passed since M3 (developing) has turned ON.		M3 (developing) PRCB (printer control board)
		F23-03	An error for DRUM_EM signal is detected when more than 3 seconds have passed since M2 (drum) has turned ON.		M2 (drum) PRCB (printer control board)
	High-voltage power error	F28-01	5 consecutive charging ON/OFF operations have been executed since the charging error detection signal has been detected while charging is turned ON.		HV (high-voltage unit)
		F28-02	5 consecutive transfer ON/OFF operations have been executed since the transfer error detection signal has been detected while transfer is turned ON.		
		F28-03	5 consecutive separation ON/OFF operations have been executed since the separation error detection signal has been detected while separation is turned ON.		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main Unit	Process abnormality	F29-01	Dirt correction failure of the Dmax sensor during maximum density adjustment. If this error is detected 10 successive times, the error code is displayed.	The machine stops immediately and turns OFF RL1 (main).	TSCB (toner control sensor board) PRCB (printer control board)
		F29-03	Control patches are not output while Dmax correction is in process. (No output from the Dmax sensor.)	No error code is displayed on the operation panel. The code is registered in data collection. Main body control is performed using previous data.	TSCB (toner control sensor board) PRCB (printer control board)
		F29-04	Dirt correction failure of the γ sensor during γ adjustment. If this error is detected 10 successive times, the error code is displayed.	The machine stops immediately and turns OFF RL1 (main).	
		F29-05	Control patches are not output while γ correction is in process. (No output from the γ sensor.)	No error code is displayed on the operation panel. The code is registered in data collection. Main body control is performed using previous data.	
		F29-06	A recurrence error occurred when carry out γ curve for γ correction.		
		F29-07	Dirt correction failure of the γ sensor during dot diameter adjustment. If this error is detected 10 successive times, the corresponding error code is displayed.	The machine stops immediately and turns OFF RL1 (main).	
		F29-08	The dot diameter correction ended with error value.	No error code is displayed on the operation panel. The code is registered in data collection. Main body control is performed using previous data.	TCSB (toner control sensor board) PRCB (printer control board)
	Fan abnormality	F32-01	An error for SUC_EM signal is detected when 2 seconds have passed since FM3 (conveyance suction) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.	The machine stops immediately and turns OFF RL1 (main).	FM3 (conveyance suction) ADUDB (ADU drive board) PRCB (printer control board)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Fan abnormality	F32-02	An error for FIXFAN1_EM signal is detected when 2 seconds have passed since FM8 (main unit cooling /2) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.	The machine body stops immediately and turns OFF RL1 (main).	FM8 (main cooling /2) PRCB (printer control board)
		F32-03	An error for FIXFAN2_EM signal is detected when 2 seconds have passed since FM7 (paper exit /R) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.		FM7 (paper exit /R) PRCB (printer control board)
		F32-04	An error for FIXFAN3_EM signal is detected when 2 seconds have passed since FM6 (paper exit /F) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.		FM6 (paper exit /F) PRCB (printer control board)
	Motor abnormality	F33-01	Error detection signal is detected continuously for 1 second when 2 seconds have passed since M5 (conveyance) has turned ON.		M5 (conveyance) PRCB (printer control board)
	High fixing temperature abnormality	F34-01	TH1 (fixing temperature /1) detects more than 220°C for five consecutive times in 1 second cycle.		PRCB (printer control board) DCPS (DC power supply unit) L2 (fixing heater lamp/1) L3 (fixing heater lamp/2) TH1 (fixing temperature /1) TH2 (fixing temperature /2)
		F34-02	The output voltage of TH1 (fixing temperature /1) and TH2 (fixing temperature /2) is detected as abnormally high at the comparator circuit (more than 228°C).		
	Low fixing temperature abnormality	F35-01	TH1 (fixing temperature /1) has not reached the predefined temperature when the specified time has passed since the fixing ON control has been processed after SW2 (sub power) is turned on.		
		F35-02	TH1 (fixing temperature /1) detects less than 120°C for 5 consecutive times in 1 second cycle while the fixing ON control is processed after warm-up operation is complete.		
		F35-03	The output voltage of TH1 (fixing temperature /1) is detected as abnormality low at the comparator circuit (less than -6°C).		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Fixing sensor abnormality	F36-01	TH1 (fixing temperature /1) has not reached 50°C when the specified time has passed since the fixing ON control has been processed after SW2 (sub power) is turned on.	The machine body stops immediately and turns OFF RL1 (main).	PRCB (printer control board) DCPS (DC power supply unit) L2 (fixing heater lamp/1) L3 (fixing heater lamp/2) TH1 (fixing temperature /1) TH2 (fixing temperature /2)
		F36-02	The output voltage of TH2 (fixing temperature /2) is detected as abnormality low (less than -6°C) or abnormally high (more than 240.5°C) at the comparator circuit.		
	Scanner abnormality	F41-01	PS61 (scanner HP) does not turn ON within 5 seconds since M11 (scanner) has turned ON.		M11 (scanner) PS61 (scanner HP) SCDB (scanner drive board) PRCB (printer control board)
	Motor abnormality	F41-02	The lock signal for M15 (polygon) is not detected within 25 seconds from the switch drive when M15 starts or when switching the rotation speed.		M15 (polygon) PMDB (polygon drive board) PRCB (printer control board)
	Fan abnormality	F42-01	An error for EM signal is detected when 2 seconds have passed since FM9 (scanner cooling) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.		FM9 (scanner cooling) SCDB (scanner drive board) PRCB (printer control board)
		F42-02	An error for WRFAN1_EM signal is detected when 2 seconds have passed since FM2 (write section cooling) has turned ON. The error does not clear after 2 seconds from the OFF/ON operation.		FM2 (write section cooling) PRCB (printer control board)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Image control abnormality	E46-01	During image write, APC cannot be performed for sub-scanning beam correction. The 12 VDC power for driving the laser is not supplied. The laser does not turn ON due to defective laser, or MPC value is different. The index sensor cannot detect the laser because the polygon mirror does not rotate, the index sensor is displaced, or the index sensor is defective.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	Write section ICB (image control board) power connector
		E46-02	Illegal address of FIFO for scanner. During image read, image data compression is not completed normally.		ICB (image control board) Expansion memory
		E46-03	Illegal address of FIFO for printer. During image read, image data decompression is not completed normally.		
		E46-05	The FIFO of the compression / expansion chip caused an error interrupt.		
		E46-06	Decompression error of image data.		
		E46-08	When APC is performed, the index sensor output does not change.		Write section ICB (image control board) power connector
		E46-12	Compression of the read image and decompression in the page memory are not completed within the specified time after negation of SVV.		ICB (image control board)
		E46-13	During image read, image data compression from the scanner to the memory is not completed within the specified time. Image data decompression from the scanner to the page memory is not completed within the specified time. SVV is not detected within the specified time.		PRCB (printer control board) ICB (image control board)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Image control abnormality	E46-14	During image read, image data decompression from the memory to the printer is not completed within the specified time. Image data output from the page memory to the printer is not completed within the specified time. PVV is not detected within the specified time.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	PRCB (printer control board) ICB (image control board)
		E46-15	During image write, improper processing was performed. For example, the decompression device was accessed although there was no resource.		ICB (image control board) ICB program
		E46-16	During image read, improper processing was performed. For example, the compression device was accessed although there was no resource.		
		E46-17	During image processing, a filter coefficient could not be generated properly.		
		E46-19	During access to the memory device, a software error was detected.		
		E46-21	Decompression from the memory to the page memory is not completed within the specified time. Compression from the page memory to the memory is not completed within the specified time. Decompression from the memory to the page memory is not completed within the specified time. Compressed data transfer between memories is not completed within the specified time.		PRCB (printer control board) ICB (image control board) ICB program
		E46-23	During image read, SVV is not turned OFF within the specified time and therefore preparation for next page scanning cannot be started.		ICB (image control board)
		E46-24	Shading correction error (GA error)		ICB (image control board) ICB program

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Image control abnormality	E46-25	AOC/AGC error • The light blocking cover and lens cover are removed from the scanner section. • The A/D converter board connector is disconnected. • The power cable of A/D converter board is disconnected. • The IC protector on the A/D converter board is blown out. • The exposure lamp intensity is excessive. • The exposure lamp does not light.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	ADB (A/D conversion board) L1 (exposure lamp)
		E46-26	Correction data saved on a resolution basis is not found.	Error code is not displayed on the operation panel. It is displayed only in data collection.	ICB (image control board)
		E46-27	The density correction γ curve cannot be generated properly.		
		E46-29	Calibration start error.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	ICB (image control board) ICB program
		E46-30	Calibration end error		
		E46-31	An attempt was made to perform APC initial sampling before completion of MPC.		
		E46-32	An attempt was made to perform MPC during APC.		
		E46-33	An attempt was made to perform sub-scan beam correction before completion of APC or MPC.		
		E46-34	An attempt was made to perform sub-scan beam interval correction although the image write clock was abnormal.		
		E46-35	Dual page memory area error Due to the image area abnormality on the memory, image is not decompressed on the memory.		
		F46-40	Hard disk initialization abnormality Hard disk failure, or poor connection of connectors	The machine stops immediately and RL1 (main) turns OFF.	ICB (image control board) ICB program HDD (hard disk drive)
		F46-41	Job information could not be stored on the hard disk.		
		F46-42	A route could not be opened during hard disk job automatic deletion.		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Image control abnormality	F46-43	Hard disk access failure Hard disk failure or poor connection of connectors	The machine stops immediately and RL1 (main) turns OFF.	ICB (image control board) ICB program HDD (hard disk drive)
		F46-50	Communication error is detected during the tandem operation.		ICB (image control board) ICB program Around the tandem cable
		F46-51	An error is detected during the data transfer of tandem image.		
		F46-60	Adjustment of the sub-scan beam interval is not completed within the specified number of time for the following reason: • Defective index sensor • Abnormal 12 VDC power supply • M15 (polygon) driving failure	Error code is not displayed on the operation panel. It is displayed only in data collection.	Write section
		F46-61	Scanning started before completion of original auto skew correction. (Skew correction was not in time).		PRCB (printer control board) PS311 (original mis-centering /F) PS311 (original mis-centering /R)
		F46-62	Printing started before correction of auto paper mis-centering. (Mis-centering correction was not in time).		PS1 (paper mis-centering detection PS)
		F46-63	AGC was retried because of reduction in exposure lamp intensity, but no error occurred.		L1 (exposure lamp)
		F46-64	The PWM γ curve could not be generated properly.		TCSB (toner control sensor board)
		E46-80	The message queue was insufficient or destroyed.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	ICB (image control board)
		E46-81	The parameter value is too large.		
		E46-82	The ID of message queue source task is undefined.		ICB (image control board) Expansion memory contact failure
		E46-83	The message reception event is undefined.		
		E46-90	The access to the memory is illegal.		ICB (image control board) Expansion memory

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Image control abnormality	E46-91	The header read address is illegal.	If copy operation is being performed, the machine stops after paper ejection. RL1 (main) is turned OFF.	ICB (image control board) Expansion memory
		E46-99	E-RDH memory initialization error E-RDH memory may not be connected properly.		
	Communication abnormality	E50-01	Main body drive serial input error 1. Serial data is not received from the main body drive section within 0.5 second after reception of power-on ACK.	The machine stops immediately. RL1 (main) is turned OFF.	PRCB (printer control board)
		E50-02	Main body drive serial input error 2. Serial data is not received from the main body drive section within 0.5 second after reception of power-on ACK.		
		E50-03	Main body drive serial input error 3. Serial data is not received from the main body drive section within 0.5 second after reception of power-on ACK.		
		E50-04	Main body drive serial input error 4. Serial data is not received from the main body drive section within 0.5 second after reception of power-on ACK.		
		E50-05	Drive board communication reception error detection fault. A reception error occurred during reception of drive board serial data, or a data checksum error or ID information error occurred four consecutive times although a resent request had been issued three times.		PRCB (printer control board) Drive boards
		E50-10	Image control board communication error. Initial data is not received from ICB (image control board) within 10 seconds after power-on.		PRCB (printer control board) ICB (image control board)
		E50-11	Image control board communication serial reception error detection fault.		ICB (image control board)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Fan abnormality	F52-01	FM13 (power supply cooling) EM signal was abnormal 2 seconds after turning ON FM13. 2 seconds after turning FM13 OFF and ON again, the signal is still abnormal.	The machine stops immediately. RL1 (main) is turned OFF.	FM13 (power supply cooling) DCPS (DC power supply unit)
		F52-02	The MAINFAN_EM signal was abnormal 2 seconds after turning ON FM1 (main body cooling /1). 2 seconds after turning OFF and ON again, the signal is still abnormal.		FM1 (main body cooling /1) PRCB (printer control board)
	Motor abnormality	F53-01	5 seconds or later after turning ON M4 (fixing), an abnormal MAINM_EM signal has been detected for 1 consecutive second.		M4 (fixing) PRCB (printer control board)
	Operation panel abnormality	E56-02	Communication between the ICB (image control board) and OB1 (operation board 1) does not start within 30 seconds after SW2 (sub power) turns ON.	Operation panel does not display normally.	ICB (image control board) OB1 (operation board 1)
RADF	Fan Abnormality	F62-01	FM301 (original conveyance motor cooling) EM signal was abnormal 2 seconds after turning ON FM301. 2 seconds after turning FM301 OFF and ON again, an abnormal detection signal is detected.	The machine stops immediately and RL1 (main) is turned OFF.	SCDB (scanner drive board) FM301 (original conveyance motor cooling)
FNS	FNS abnormality	E70-1	Communication error		FNSCB (FNS control board) Connector
		E70-2	Start response error.		
		F77-1	The shift unit does not reach the shift position or the HP within the specified time.		FNSCB (FNS control board) M702 (shift) PS718 (shift HP)
		F77-2	After M703 (tray up/down) starts operation, PS702 (tray upper limit) or PS707 (stapler paper exit upper limit) does not turn ON within the specified time.		FNSCB (FNS control board) M703 (tray up/down) PS702 (tray upper limit) PS707 (stapler paper exit upper limit)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
FNS	FNS abnormality	F77-3	After M705 (alignment /U) starts operation, PS708 (alignment HP/U) does not turn OFF within the specified time, or does not turns ON after OFF.	The machine stops immediately and RL1 (main) is turned OFF.	FNSCB (FNS control board) RB (relay board) M705 (alignment /U) PS708 (alignment HP/U)
		F77-4	After M707 (paper feed roller) starts operation, it does not reach the prescribed speed within the specified time.		FNSCB (FNS control board) M707 (paper exit roller)
		F77-5	After M708 (paper exit opening) starts operation, its open/close operation does not finish within the specified time. PS712 (paper exit opening HP) does not turn ON or OFF.		FNSCB (FNS control board) M708 (paper exit opening) PS712 (paper exit opening HP)
		F77-6	After M711 (stapler movement) starts operation, PS711 (stapler movement HP) does not turn OFF, or does not turn ON after OFF.		FNSCB (FNS control board) RB (relay board) M711 (stapler movement) PS711 (stapler movement HP)
		F77-7	After M704 (clincher rotation) starts operation, PS714 (clincher rotation HP) does not turn OFF, or does not turn ON after OFF.		FNSCB (FNS control board) RB (relay board) M704 (clincher rotation) PS714 (clincher rotation HP)
		F77-8	After M706 (stapler rotation /R) starts operation, PS713 (stapler rotation HP) does not turn OFF, or does not turn ON after OFF.		FNSCB (FNS control board) RB (relay board) M706 (stopler rotation /R) PS713 (stapler rotation HP)
		F77-11	After M714 (stapler /F) starts operation, PS731 (stapler HP/F) does not turn ON within the specified time.		FNSCB (FNS control board) RB (relay board) M714 (stapler /F) PS731 (stapler HP/F)
		F77-12	After M709 (stapler /R) starts operation, PS730 (stapler HP/R) does not turn ON within the specified time.		FNSCB (FNS control board) RB (relay board) M709 (stapler /R) PS730 (stapler HP/R)
		F77-13	After M715 (clincher /F) starts operation, PS733 (clincher HP/F) does not turn ON within the specified time.		FNSCB (FNS control board) RB (relay board) M715 (clincher /F) PS733 (clincher HP/F)
		F77-14	After M710 (clincher /R) starts operation, PS732 (clincher HP/R) does not turn ON within the specified time.		FNSCB (FNS control board) M710 (clincher /R) PS732 (clincher HP/R)

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
FNS	FNS abnormality	F77-21	After M718 (folding stopper) starts operation, PS723 (folding stopper HP) does not turn ON within the specified time.	The machine stops immediately and RL1 (main) is turned OFF.	FNSCB (FNS control board) RB (relay board) M718 (folding stopper) PS723 (folding stopper HP)
		F77-22	After M716 (alignment /L) starts operation, PS724 (alignment HP/L) does not turn ON within the specified time.		FNSCB (FNS control board) RB (relay board) M716 (alignment /L) PS724 (alignment /L)
		F77-25	After M719 (folding knife) starts the HP detecting operation, PS722 (folding knife HP) does not turn ON within the specified time.		FNSCB (FNS control board) M719 (folding knife) PS722 (folding knife HP)
		F77-26	After M720 (folding conveyance) starts operation, it does not reach the prescribed speed within the specified time.		FNSCB (FNS control board) M720 (folding conveyance)
	PI abnormality	F77-41	After M202 (tray up/down /L) starts operation, PS209 (tray upper limit /L) or PS210 (tray lower limit /L) do not turn ON within the specified time.		FNSCB (FNS control board) PIDB (PI drive board) M202 (tray up/down /L) M209 (tray upper limit /L) PS210 (tray lower limit /L)
	PI abnormality	F77-42	After M201 (tray up/down/ U) starts operation, PS204 (tray upper limit /U) or PS205 (tray lower limit /U) do not turn ON within the specified time.		FNSCB (FNS control board) PIDB (PI drive board) M201 (tray up/down /U) PS204 (tray upper limit /U) PS205 (tray lower limit /U)
		F77-43	After M203 (PI conveyance) starts operation, it does not reach the prescribed speed within the specified time.		FNSCB (FNS control board) M203 (PI conveyance)
	PK abnormality	F77-54	After MC801 (punch) starts operation, PS801 (punch HP) does not turn ON within the specified time.		FNSCB (FNS control board) PKDB (PK drive board) M801 (punch) PS801 (punch HP)
	FNS abnormality	F77-81	After MC712 (gate drive) starts operation, PS716 (gate HP) does not turn ON within the specified time or does not turn OFF after ON.		FNSCB (FNS control board) RB (relay board) M712 (gate drive) PS716 (gate HP)
		F77-91	Communication abnormality in FNS CB (FNS control board) when sub-CPU receives data.		FNS CB (FNS control board)
		F77-92	Communication abnormality in FNS CB (FNS control board) when main CPU receives data.		

	Classification	Warning Code	Cause	Machine response	Estimated abnormal parts
Main body	Communication abnormality	E80-01	No response from PRCB (printer control board) for 5 seconds after SW2 (sub power) is turned ON.	The machine stops immediately and RL1 (main) is turned OFF.	PRCB (printer control board)
		E80-02	Communication abnormality in PRCB (printer control board).		PRCB (printer control board)
		E80-03	Communication abnormality in operation unit.		OB1 (operation board /1)
	ISW abnormality	F80-11	When SW2 (sub power) was turned ON, an area which had not been written by ISW was detected in the printer control program.		PRCB program
		F80-30	When data is transferred by ISW, normal header information cannot be received within the specified time.		Printer cable PC parallel port
		F80-31	When data is transferred by ISW, a checksum error or header error was detected in the downloaded data.		Printer cable Program file error
		F80-32	When data is transferred by ISW, data cannot be written to the flash ROM properly.		Printer cable Program transfer destination board
		F80-40	When SW2 (sub power) was turned ON, an area which had not been written by ISW was detected in the FNS program.		FNS program
	ADU stand abnormality	E90-01	ADU drive serial input error 1. Serial data from ADUDB (ADU drive board) (ID=0) cannot be received from ACK within 0.5 second when SW2 (sub power) turns ON.		ADUDB (ADU drive board)
		E90-02	ADU drive serial input error 2. Serial data from ADUDB (ADU drive board) (ID=7) cannot be received from ACK within 0.5 second when SW2 (sub power) turns ON.		
	Fan abnormality	F92-01	The FM10 (ADU reverse motor cooling) EM signal was abnormal 2 seconds after turning ON of FM10. 2 seconds after turning FM10 OFF and ON again, the signal is still abnormal.		FM10 (ADU reverse motor cooling) ADUDB (ADU drive board) PRCB (Printer control board)

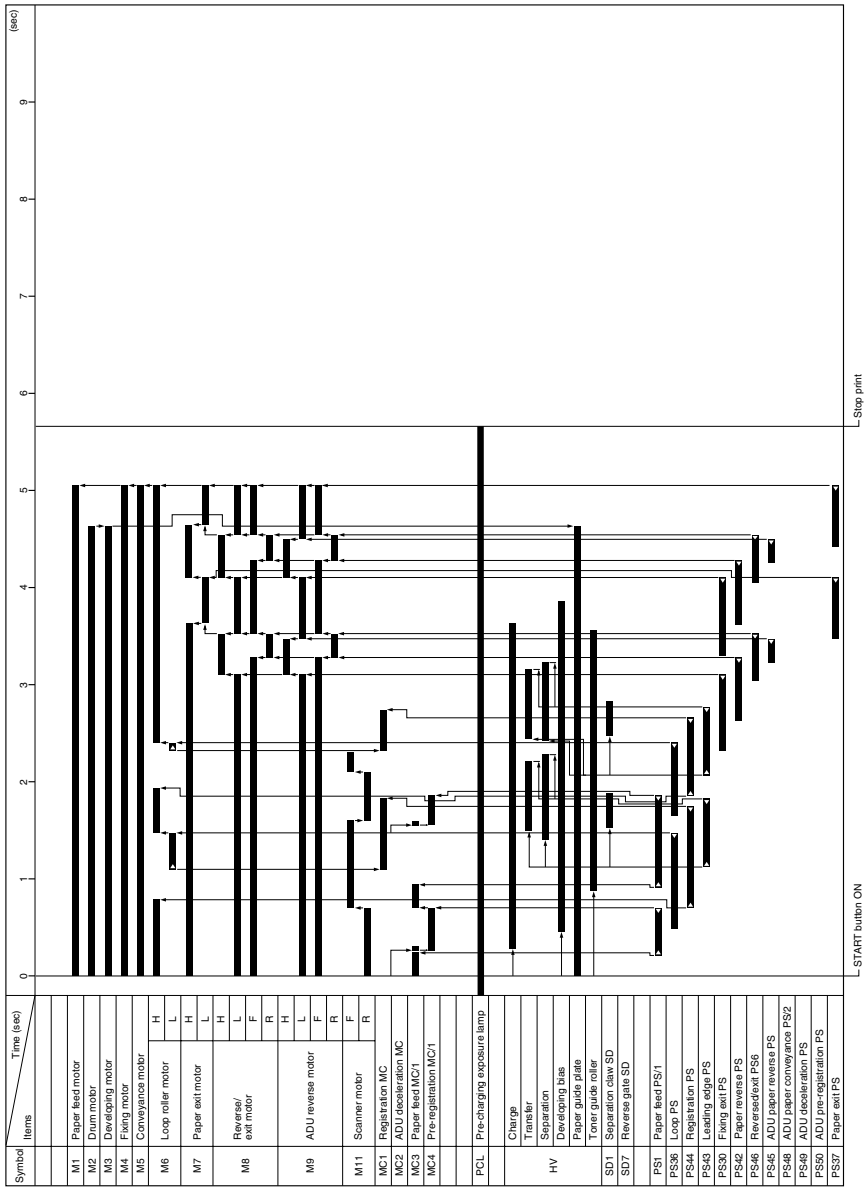
For the following abnormalities, the user can disconnect the faulty unit temporarily to continue using the machine.
When an abnormality occurs, press the reset button following the LCD message, and turn the SW2 (sub power) OFF/ON. This allows temporary use of machine until the SW2 (sub power) is turned OFF/ON next time.

Warning code	Cause	Unit to be disconnected
F18-10	Tray 1 up drive motor abnormality	Tray 1
F18-11	Tray 1 up abnormality	
F18-20	Tray 2 up drive motor abnormality	Tray 2
F18-21	Tray 2 up abnormality	
F18-30	Tray 3 up drive motor abnormality	Tray 3
F18-31	Tray 3 up abnormality	
F13-02	LCT paper feed motor abnormality	LCT
F18-50	LCT UP/DOWN motor abnormality	
F46-40 to 43	HDD abnormality	HDD
F62-01	DF motor cooling fan abnormality	RADF
F77-22,25,26	Fold, stitch and fold, three-fold abnormality	Fold, stitch and fold, three-fold
F71-41 to 43	PI abnormality	PI

TIMING CHART

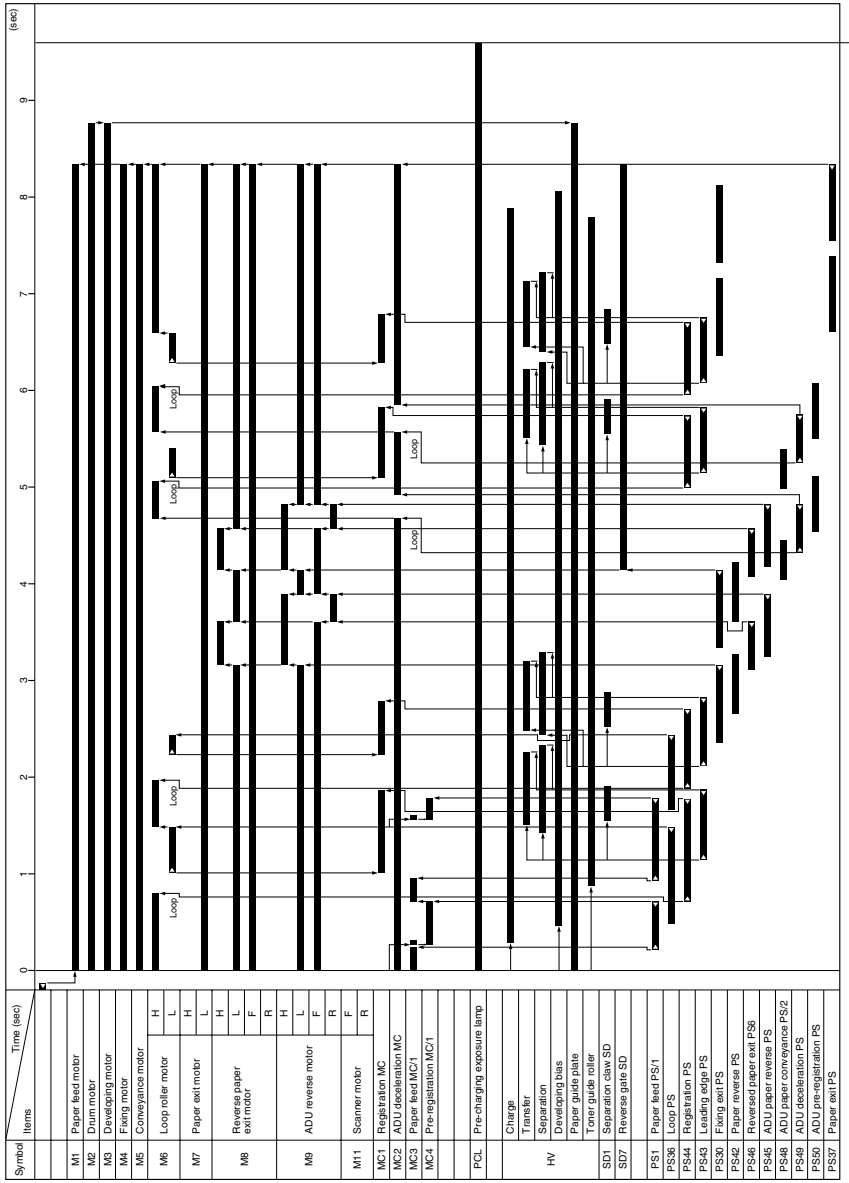
[1] Timing Chart (1)

A4, life size, 1-1 mode, Tray 1, reversed paper exit, non AE, 2 sets



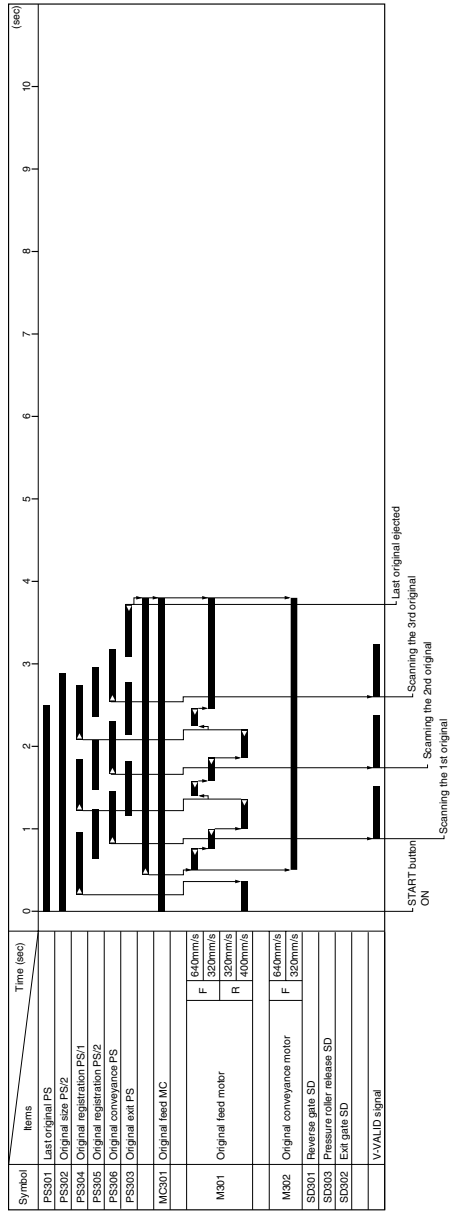
[2] Timing Chart (2)

A4, life size, 1-2 mode, Tray 1, 2 sets



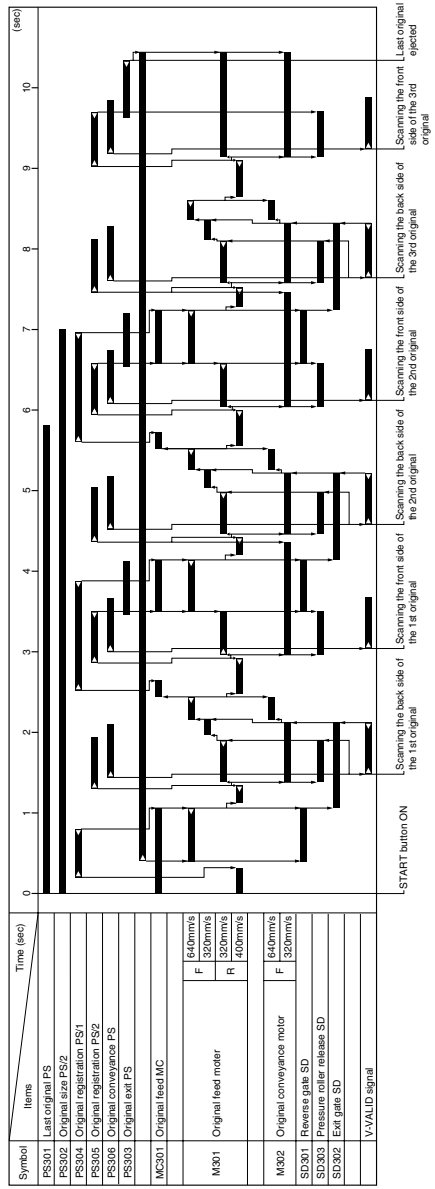
[3] RADF Timing Chart (1)

A4, 3 originals (single side)



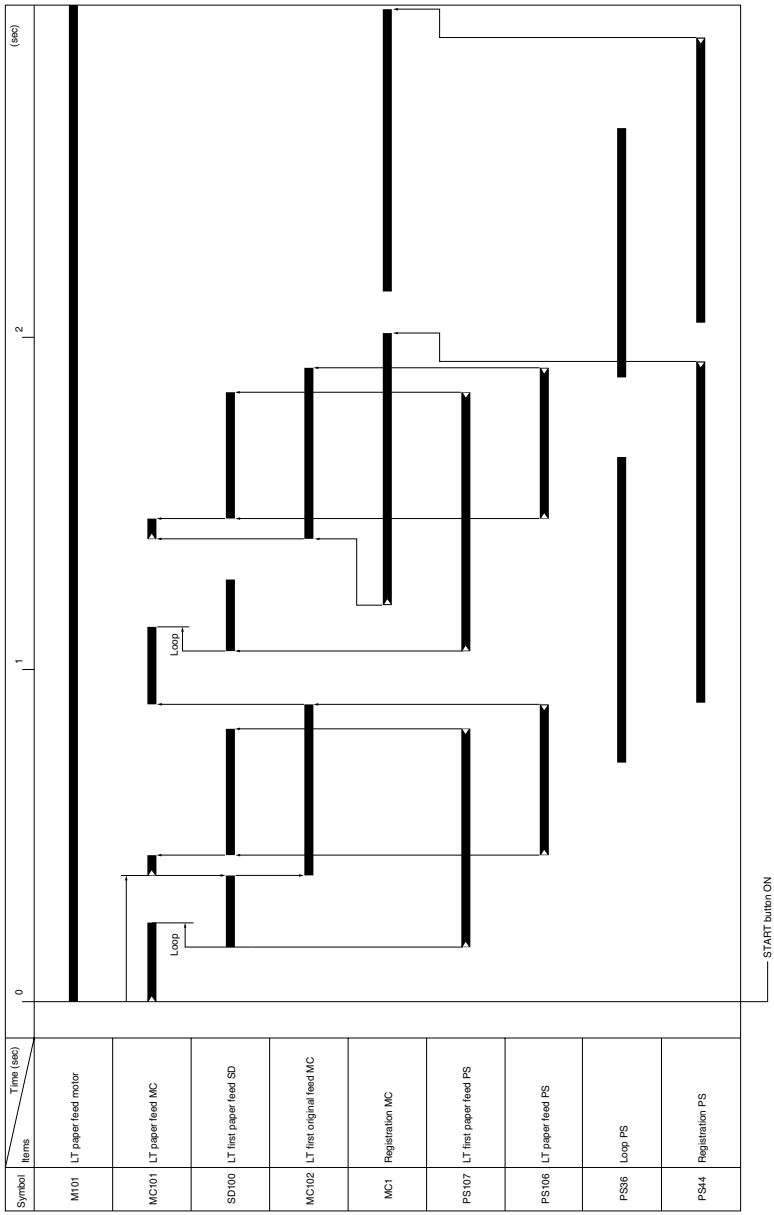
[4] RADF Timing Chart (2)

A4, 3 originals (double side)



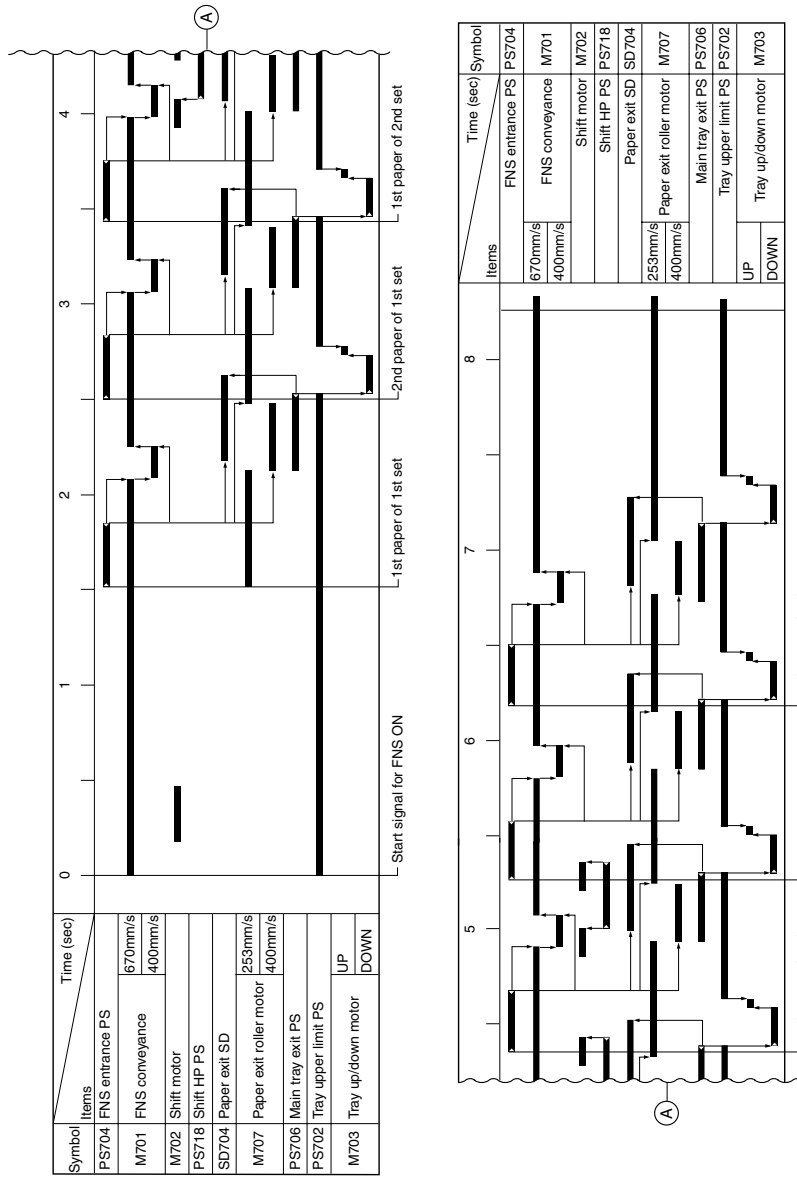
[5] LCT Timing Chart

A4, life size, 1-1 mode, non AE, 2 sets



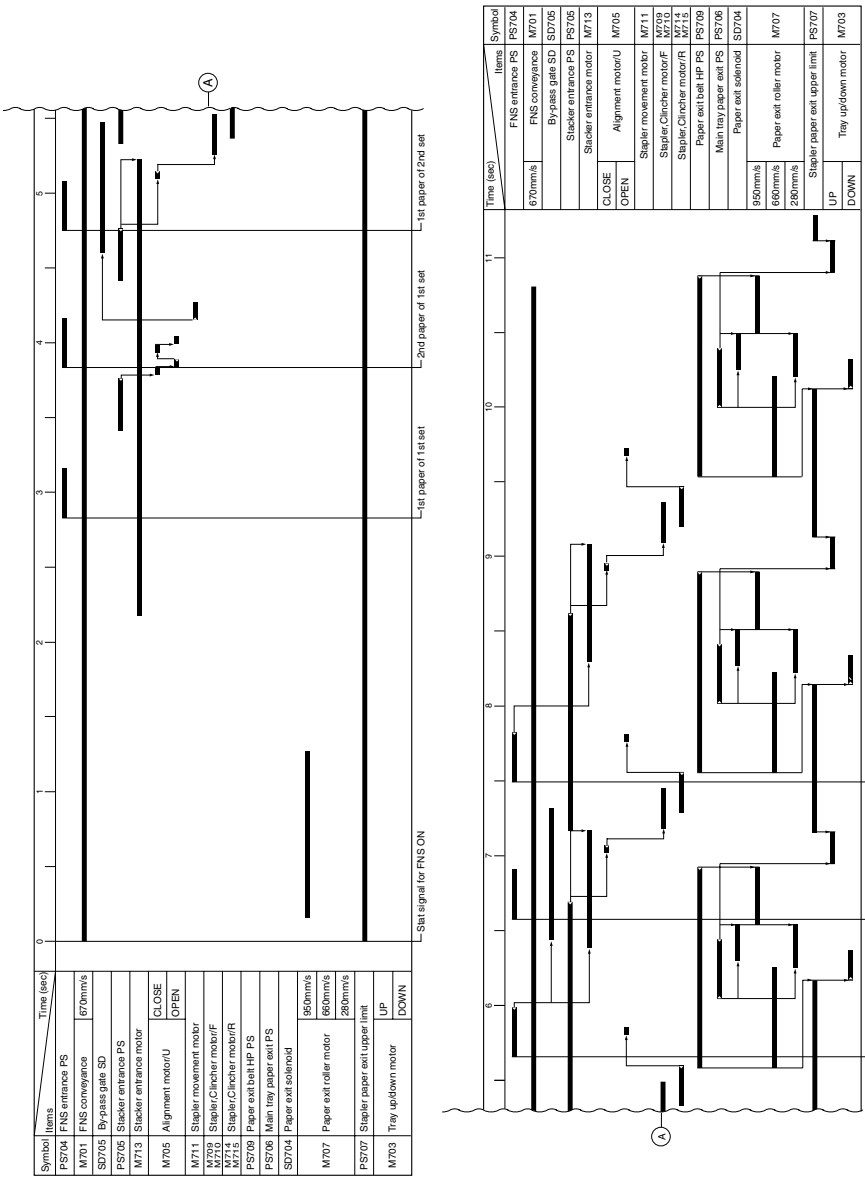
[6] FNS TIming Chart (1)

Sort, A4, 2 originals (single side), 3 sets



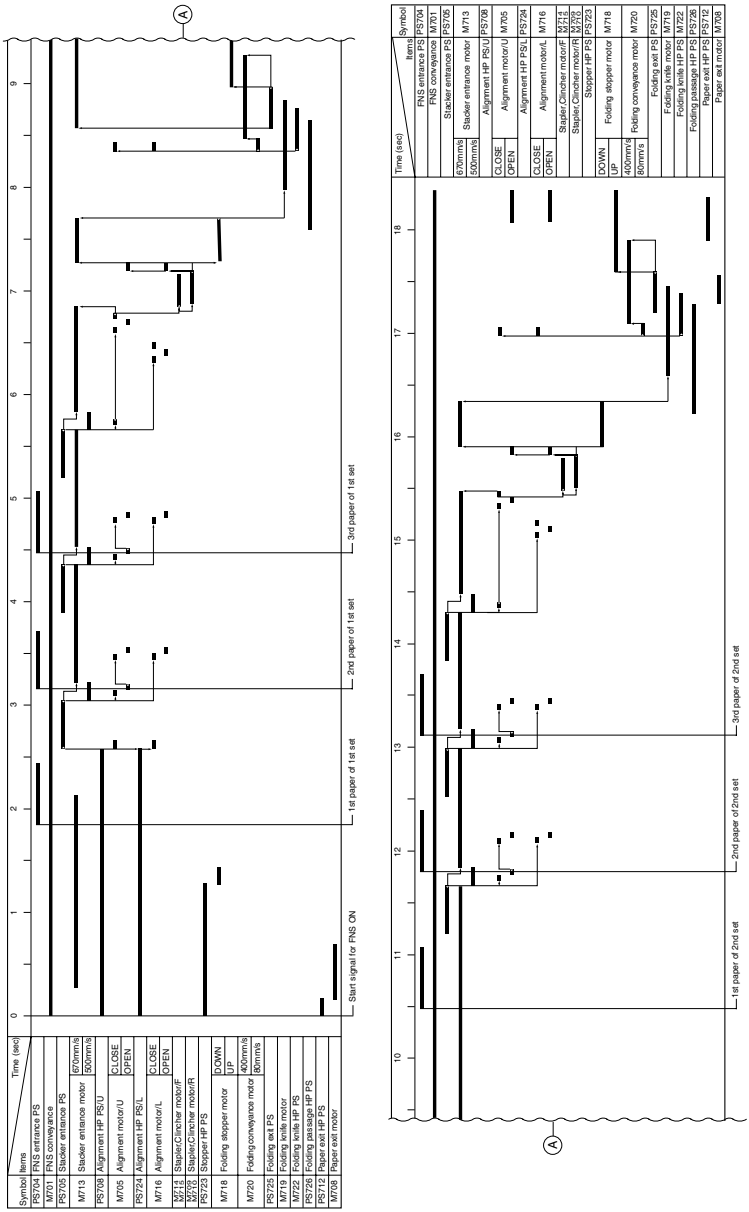
[7] FNS Timing Chart (2)

2 staples (flat), A4, 2 originals (single side), 6 sheets (single side)



[8] FNS Timing Chart (3)

Stitch and fold, A4, 2 originals (single side), 6 sheets (single side)



4 ELECTRIC PARTS LIST

5

ISW

<$VOLNUM ISW

WHAT'S ISW?

ISW (In-System Writer) is a process of updating the control programs stored in flash ROM mounted on various control boards in a Minolta digital copier without isolating the boards from the copier. Running ISW enables you to upgrade control programs without replacing the boards and maintain the boards during their replacement.
Tool available for running ISW include ISW Trns (PC software), which connects a personal computer (PC) to the digital copier.
This tool can be plugged into the ISW connector of the digital copier to directly update the control programs in flash ROM assembled in the machine.
This chapter focuses on instructions to set up this machine to run ISW. For instruction on how to run ISW Trns refer to the Minolta ISW (In-System Writer) Service Manual.

Note: Only ISW Trans is enabled with ISW for this machine.

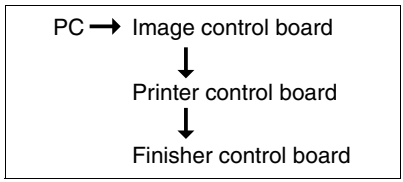
SETUP

[1] ISW-compatible boards

This machine allows ROM data residing on the following boards to be updated via ISW:

- Image control board
- Printer control board
- Finisher control board

[2] Data flow



Important Note:

The availability of the image control program is prerequisite to updating on other boards.

[3] Prepare the copier to start an ISW transfer

1. Transfer modes

   The copier supports two transfer modes as described below.

   - **Power-on mode**
     If the copier does not have the image control program installed, the program can be sent directly from a PC to the machine when the main switch is turned on.
   - **25 mode**
     The 25 mode will only work if the image control program is installed.

2. Instance of ISW transfer

   Instances of ISW transfer are as described below:

   - **Writing ROM data newly (Ex. when replacing boards)**

	Normal startup display	Writing method	Condition
Image control	Flashing timer LED No display on the operation LCD	Writing is enabled with power turned ON.	The copier does not have the image control program installed.
Others	Error code display	25 mode	The copier has the image control program installed.

   - **Upgrading**

	Normal startup display	Writing method	Condition
Image control	Normal	25 mode	The copier has all the programs installed.
Others	Normal		

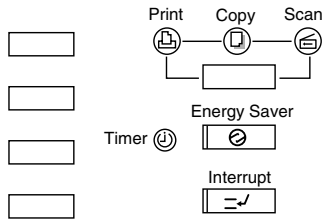
[4] Preparing the copier to transfer

Start the copier with 25 mode enabled to put the copier into ISW transfer wait state.

Step	Procedure
1	Enter 25 mode.
2	**[Memory setting mode menu Screen]** Press "11 ISW".
3	**[ISW mode menu Screen]** Select the control board on which to update ROM data.
4	**[ISW mode Screen]** The Start key appears, indicating the copiers readiness to launch an ISW transfer.
5	Follow operating instructions in Minolta ISW (In-System Writer) Service Hand book.

[5] Relationships between processing states and operational LEDs

Note: This is displayed only when installing the program to graphics control for the first time.



No.	Processing	Timer LED (orange)	Energy Saver LED (green)
1	Initializing CPU now	● OFF	● OFF
2	Checking memory	● OFF	● OFF
3	Memory check error (waiting for data from PC)	◎ Flashing	● OFF
4	ISW processing (receiving data)	● OFF	◎ Flashing
5	ISW processing (writing to flash ROM)	● OFF	
6	Transfer data error	◎ Flashing	◎ Flashing
7	Flash ROM write error	◎ Flashing	○ ON
8	Memory check successful and reboot	● OFF	● OFF

[6] Rewriting procedure after an error interruption

If errors occur while writing ROM data, it is written the same way as explained in "Writing ROM data newly" in "[3]2. Instances of ISW transfer".

- **Image control program**

The timer LED (orange) flashes. {Nothing will appear on the operation LCD because the image control board controls the entire unit.}

Retry ISW after turning the main switch OFF, then ON.

- **Other control programs**

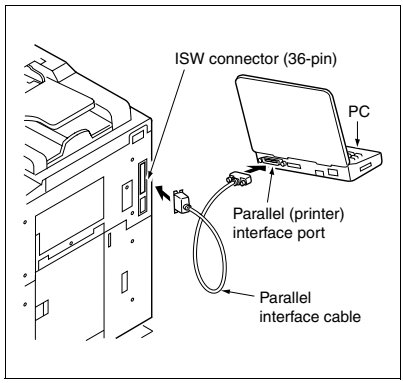
Relaunch the 25 mode to retry ISW. {It is assumed that the copier has the iamge control program successfully installed.}

[7] Connecting to the ISW connector

The ISW connector is at the right side of the copier.

a. Procedure

(1) Connect the PC parallel port and the copier ISW connector with a parallel interface cable.



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7662-4024-11 01100200